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ABSTRACT

Volume One of a report by the Arizona Board of Regents' independent citizen commission to examine the performance of the state's three public universities presents background material on the formation of the task force, a final report, and a summary of recommendations. It then presents 27 working papers in two sections. Section 1, Ethnic Minority Students, offers 11 papers, including the following "Community College-University Articulation in Arizona" (R. MacVicar); "Progress Report: Access and Persistence of Minority Students in the Arizona Universities" (A. Cotera and others); "Student Financial Assistance in the Arizona Public Universities" (V. Cowart); "Barriers to Minority Access and Persistence in Arizona's Universities: Perceptions of Students, Faculty, Staff, and Administrators (J. Wood); and "Minority Education in Arizona's Universities" (J. Wood). Section 2, Quality of Undergraduate Education, features 16 working papers, including: "Evaluation and Assessment: A Literature Review (Summary)" (M. Talbott and K. Church); "Teacher Supply and Demand in the 1990's and Professional Education of Teachers in Arizona" (E. Sherberg); "Report on Honors Programs at the University of Arizona, Arizona State University and Northern Arizona University" (C. Austin); "Role of Temporary Faculty in Undergraduate Education at the Three Arizona Universities" (G. Davis and others); "A Survey of Undergraduate Student Opinions" (K. Church), and "Arizona: The State and Its Educational System" (H. Hodgkinson). (SM)

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THE FINAL REPORT AND WORKING PAPERS OF THE ARIZONA BOARD OF REGENTS' TASK FORCE ON EXCELLENCE, EFFICIENCY AND COMPETITIVENESS

Volume One

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HE 022 446

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INTRODUCTION

In March, 1987, prompted by a growing awareness of a continuing demand for educational services by Arizona's three public universities in an environment of increasing competition for state general fund appropriations, the Board of Regents created an independent citizen commission to examine the performance of these institutions. The Task Force on Excellence, Efficiency and Competitiveness was composed of two Regents, the Speaker of the House of Representatives, the President of the Senate, the Governor and eight citizens. Early in the life of the Task Force, the Governor designated a Regent as his replacement. Mr. A.J. Pfister, a member of the Board of Regents, became the Chair of the Task Force and guided its efforts throughout its existence.

To more clearly define its tasks in light of the perceived concerns of opinion leaders in the state, the firm of Coopers & Lybrand was engaged by the Task Force to conduct a survey in June and July, 1987. As a result of their efforts, the following areas were identified as appropriate for the focus of the Task Force:

- o Current status and projections of future university educational services needs.
- o Access to and persistence in the universities.
- o Provision of services to rural Arizona.
- o Quality assessment of undergraduate education.
- o Research in the universities and graduate study; technology transfer and economic development in Arizona.
- o Management efficiency, primarily focused on non-academic support services.
- o University funding process and adequacy of resources.
- o Accountability and productivity.
- o Strategic planning.

The supportive staff for the conduct of the studies was provided by "loaned executives" from the three universities, and two recruited professionals. This group presented a work plan for the study based on the proposals of Coopers & Lybrand, and it was approved by the Task Force in September, 1987. This plan proposed that the issues of management efficiency of non-academic support services and funding systems be assigned to an external organization. Following a request for proposals process, a contract was negotiated with the firm of Coopers and Lybrand to conduct the study of these two areas of university management.

In the following months the Task Force staff prepared working documents on various aspects of the assignments which were presented to and critiqued by the Task Force, university representatives, the Board staff and other interested persons. The Task Force prepared the final report which has been presented for appropriate action to the Board of Regents, the Executive and legislative branches of state government, the universities, the Board staff, and the people of Arizona. The working papers contained in this publication have not been approved by the Task Force. They contain 131 resolutions for consideration by the state in addition to those found in the final report.

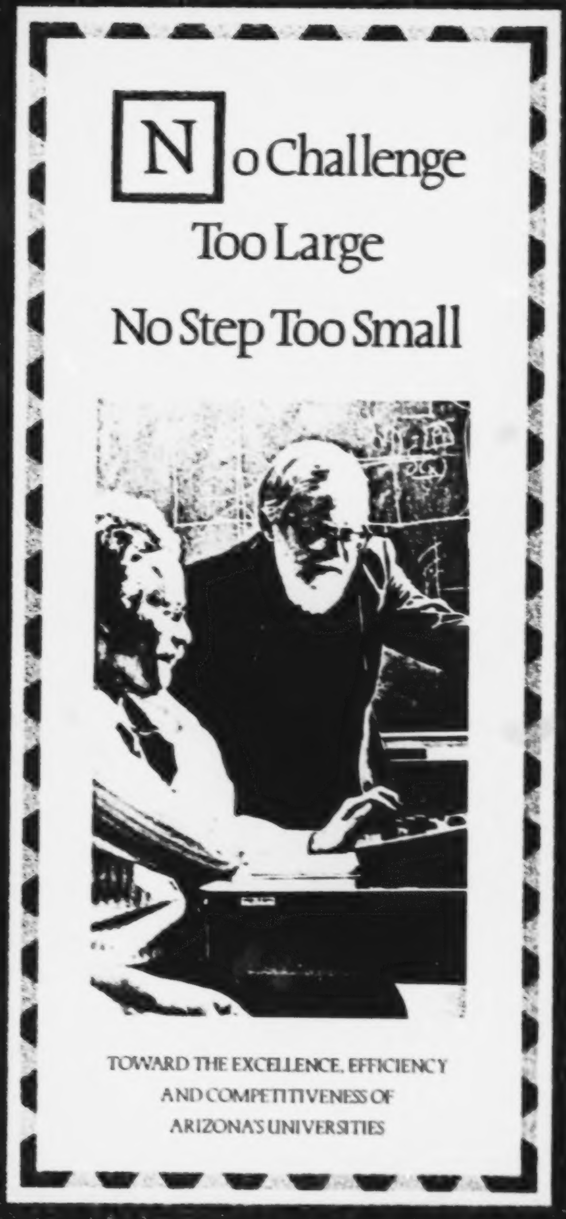
The future of the state and its university system are inexorably interwoven. The result of strong institutions of higher education will be a more attractive and economically viable state. In response, the universities need to efficiently and effectively provide instruction, research and service programs that will support future development and enhance the quality of life in Arizona. This, in time, will increase the competitiveness of the state and enhance its ability to support education generally, and the university segment specifically. The triad of excellence, efficiency and competitiveness is at once a process and a result.

It is within this framework that the Task Force presents its report and staff working papers to the people of the State of Arizona.

Robert MacVicar
Executive Director

November, 1988

FINAL REPORT



No Challenge Too Large No Step Too Small

TOWARD THE EXCELLENCE, EFFICIENCY
AND COMPETITIVENESS OF
ARIZONA'S UNIVERSITIES

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The Task Force Recognizes With Appreciation a Grant from the Flinn Foundation, Phoenix, Which Made Possible the Publication of this Report.

A Report and Recommendations of the Regents' Task Force on Excellence, Efficiency, and Competitiveness.

Preface

In March, 1987, the Arizona Board of Regents, under the leadership of President A. J. Pfister, created a Task Force on Excellence, Efficiency and Competitiveness. A growing awareness of the diverse demands for educational services during a period of increasing competition for state general fund appropriations prompted the Board's action. The Regents recognized that the University of Arizona (UA), Northern Arizona University (NAU) and Arizona State University (ASU) will have unique opportunities to forge new partnerships during the balance of this century as they capitalize on the vitality of an expanding population and a changing economy. The Board charged the Task Force with evaluating the excellence, efficiency and competitiveness of the three Arizona universities in meeting these challenges. ■ The consulting firm of Coopers & Lybrand conducted a statewide survey during the summer of 1987 to synthesize the opinions of Arizona's leaders on the challenges facing Arizona's public universities. The survey results were clear: while Arizona's leaders wanted assurance that taxpayer dollars were being spent carefully, they were much more concerned about many issues related to the future quality of the state's public universities. The Task Force subsequently selected eight high-priority areas for examination:

ETHNIC MINORITY STUDENTS. How can Arizona increase the opportunities for minority students to realize more rewarding and productive lives through the benefits of a university education?
UNDERGRADUATE EDUCATION. How can the universities improve the quality of undergraduate education?
RESEARCH AND GRADUATE EDUCATION. What is the role of research efforts at the Arizona universities? Does the overall quality of graduate education fulfill student expectations and prepare students for their professional careers?
RURAL AND COMMUNITY COLLEGE STUDENTS. How can Arizona increase educational opportunities for students from rural areas and community college transfers who can benefit from a university education?

The survey results were clear: while Arizona's leaders wanted assurance that taxpayer dollars were being spent carefully, they were much more concerned about many issues related to the future quality of the state's public universities.

UNIVERSITIES—A STATE RESOURCE. How well do the universities' current missions, responsibilities and programs enhance the competitive position of the state?
MISSION DEVELOPMENT AND STRATEGIC PLANNING. How well do the current missions, programs and strategic plans of the universities meet the needs of the state?
MANAGEMENT EFFICIENCY AND ACCOUNTABILITY. How can the universities and the Board improve their operating efficiency?
FUNDING AND RESOURCE UTILIZATION. Do the process of funding and the management of human and other resources adequately reflect state priorities and university missions and

encourage their development? ▬ The work of the Task Force, its Executive Director, "loaned executives" from the universities and the Board staff, and external consultants and advisors, partially funded by a grant from the Flinn Foundation, has culminated in this report. It is supported by an extensive series of working papers listed in Appendix B. These documents contain detailed analyses of important issues and additional recommendations, which are intended to provide assistance during the implementation phase of our study. Not all of the members of the Task Force were able to attend all of the meetings. Because of their responsibilities, several were able to attend only a few meetings. However, a final draft of the report was reviewed with each Task Force member, and the report represents a consensus of all of the Task Force members. We present our report, along with the working papers of the Task Force staff and reports from external consultants and advisors, for appropriate action to the Board of Regents, the universities, the Executive and Legislative branches of state government, and the citizens of Arizona.

Introduction

During our fifteen months of study and deliberation, we have developed 24 recommendations about our universities and the societal needs they serve. We based these recommendations upon numerous reports and surveys emanating from our work, as well as the many interviews and conversations we had with numerous stakeholders in the future of Arizona's institutions of higher education. In reflecting on the totality of this experience, the Task Force was struck by the enormity of the expectations for the state's universities. At times it seemed that there was no challenge too large for the universities to undertake. For example, they are expected to assist in correcting the results of decades of substandard performance of the public school sector. Economic development experts believe, and correctly so, that vigorous university research at the frontiers of knowledge is a magnet to attract high technology industry to Arizona. Indeed, there are few major problems facing our state that do not require strong and effective universities to assist in the solutions. ▬ These important issues are ones that could easily overwhelm the considerable resources of the three universities. As we struggled with the challenges faced by the universities, we were encouraged by the observations of author, management consultant, and Task Force advisor, Robert Waterman, Jr. that too often in today's organizational thinking, only proposals for quantum leaps will produce acceptable changes. He reasons that as an organization (such as a university) grows, it begins to believe that only dramatic steps can produce future improvements. Mr. Waterman suggests that this attitude forms a barrier to an organization's dealing with and preparing for change in a rational and systematic manner. ■ Arizona's public universities have had a steady series of "big successes" over the past thirty years, including major increases in enrollments, faculty, library holdings and research grants. We feel confident they will enjoy many more successes in the future. We also believe that Arizonans want them to accept new challenges related to student admissions and retention, undergraduate teaching, economic development and productivity that, upon first reflection, might appear as global problems requiring quantum leaps. In truth, however, our universities can meet these new challenges by taking a series of small steps toward consciously determined and ascertainable goals. We believe this view is a more effective and constructive approach to the challenges of and opportunities for change. We thus have entitled our report *"No Challenge Too Large, No Step Too Small."* ■ We hope that Arizonans accept the intent and spirit of this report and our recommendations as calls to the Board and the universities for their commitment to a coordinated, sustained series of steps to assure the achievement of "small gains" required to produce meaningful change and renewal. We recognize that we are proposing an extensive agenda that will require the Board to set implementation priorities and to seek additional funding where appropriate. The Board and the universities cannot accomplish all recommendations simultaneously. Nonetheless, in our view, the issues raised have such importance to the state that measurable progress in each area will be required. ■ Our universities' progress is a tribute to the personal successes of university students, faculty, staff and alumni, several of whom our report recognizes. Their achievements typify the many positive actions that our institutions already have taken to meet the needs of Arizona and its citizens.

During our fifteen months of study and deliberation, we also have reached a number of conclusions that provide the foundation for this report: ■ *An outstanding public university system is fundamental to the quality of life in Arizona.* Citizen resolve, informed leadership and significant financial investments have created strong public institutions of higher learning in Arizona. The destiny of our state remains firmly and inescapably interwoven with its public universities. ■ *We will have to plan strategically and work conscientiously to assure that the state and its universities remain nationally and internationally competitive.* The days of Arizona's economic reliance on climate, copper, cotton, citrus and cattle have passed. During the past three decades, Arizona's universities surged past many other institutions with a growth pace that they will find difficult to duplicate in the future. Arizona's diversified economy and strong university and community college systems offer continuing promise for future gains. We now face determined challenges from other states and nations that already have recognized the fundamental interdependence of economic development and strong universities. Arizona will not continue to compete effectively without an educated labor force and improvements in the transfer of research technology. ■ *Arizona has benefited from a unique higher education structure and partnership.* Arizona has an unusually small number of public and private four-year colleges and universities, most of which, fortunately, are located in centers of projected population increases. A complementary, first-rate community college system provides a major entry source for undergraduate students into the universities. In contrast, many other states are struggling with defining missions and dividing resources for overextended higher education systems. The Board and the universities need to develop updated mission statements and require greater cooperation if Arizona's ability to concentrate its resources is to remain a competitive advantage. ▬ *Arizona and its universities will continue to grow.* Even the most conservative estimates confirm that net population increases will place additional responsibilities and demands upon our universities. New technologies will offer the opportunity and flexibility to serve a wider range of degree-seeking and continuing education students. ▬ *Our universities have improved significantly in the past thirty years.* National norms recognize that NAU, ASU and UA are well-respected institutions that provide meaningful educational and research services to the state and the nation. We believe that our universities will continue to grow in stature in the coming decade. The challenge is to preserve the autonomy that has contributed so significantly to the development of each university and to find the right measure of accountability and direction imposed by the Board as the stewards of public university education in Arizona. ▬ *The ethnic demographics of Arizona and the rest of the Southwest are changing.* The percentages of Hispanics and American Indians within Arizona's population will increase significantly during the next decade. We do not need to produce elaborate estimates. We already know that ethnic minorities total 36 percent of this year's elementary school population, and that those students will reach college age in the years 1998-2004. ▬ *Assuring that minority students have an access to a higher education and stay in the university until they graduate are important state priorities not yet achieved.* The poor entrance and graduation rates of ethnic minority students at universities remain a deep national concern. In Arizona, we do not suffer from a shortage of reports identifying this problem, but from a shortage of resolve and results. ▬ *The state has finite resources to support its public agencies and its universities. The universities must effect greater efficiencies and improved accountability mechanisms to assure the continuation of current levels of support. Additional external funds will permit the universities to attain margins of excellence that they cannot achieve through state funding alone.* The state has provided higher education resources at reasonable levels during the past three decades. Competition for resources with other state programs, however, has increased significantly in recent years, and has resulted in a decreased share of the state's resources going to higher education. Nevertheless, university budgets have grown to a size that will require greater performance accountability. While state support will have to increase as the demands on the universities and student populations increase, the margin of excellence will only be achieved by augmenting those funds

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with a combination of federal, corporate and private funds. ▬ *Arizona's universities have reached a developmental stage where the Board must assume a different role in order to take full advantage of future opportunities.* Arizona's universities have developed into large and complex institutions by successfully responding to the demands of a number of constituencies and available opportunities. Ironically, as a result of these remarkable transformations, some of these constituencies recently have raised issues such as institutional size, operational efficiency and program duplication. The increasing size and complexity of the universities compel the Board to enhance its policy development and planning functions. The Board must strengthen the roles of the university presidents and the Board's Executive Director by delegating more responsibility and authority. The Board must assure that the universities respond to and efficiently meet the state's needs while remaining distinct in mission and character. The Board also must retain its fiscal autonomy, and the universities must retain their administrative flexibility. These two factors have played key roles in their successes to date.

We also believe that certain forces will drive the changes anticipated for Arizona and its universities over the next decade. They include: ▬ The economies of Arizona and the rest of the country will become increasingly international in scope. The economic interdependence of the major countries of the world has caused the United States, for the first time in decades, to realize the difficulty of remaining competitive. We will have to develop new attitudes. We will have to learn new techniques of communication. We will have to learn the cultural nuances of many foreign countries to maintain our current competitive position. Our educational institutions will have to prepare us for what lies ahead. ▬ Recent surveys suggest that Americans believe that the improvement of our entire educational system must receive high national priority for the 1990's. The national focus on education will produce demands for increased services, funding and program accountability. ▬ Demographic trends suggest that Arizona's rate of growth will not increase as rapidly in the next 20 years as it did in the past 20 years. The 20-34 year-old age group, which traditionally has produced the largest Arizona in-migration increase, has begun to decrease in percentage of population and will continue to do so. In addition, minority representation will increase in the general population, especially in the early school years. These demographic shifts will cause dramatic changes in Arizona's political, economic, social and educational systems. ▬ The issues of increasing national debt and negative trade balances will continue to dominate economic decision making. New jobs are likely to evolve in the service sector and require a different pattern of education. Shifts in the age distribution of the workforce and increases in the numbers of part-time jobs will make several current indicators of change, such as unemployment, less reliable. We will experience difficulties in understanding these new economic conditions and their impacts on historical behavior as we shift to a more information intensive environment. ▬ Technological innovations in the information industries (computing, communications, storage and retrieval, artificial intelligence), biology (genetic engineering, biotechnology, synthetic drugs), and synthetic materials (high-strength, light materials designed for specific purposes) will lead to significant changes in the functioning of our society. Our universities must maintain a leadership role in the development of such innovations. ■ Public attitudes, values and political inclinations move in cycles. Early signs indicate shifts to viewpoints reflecting greater tolerance, greater diversity of interests, and greater social activism. The groups and organizations with which people involve themselves will continue to change (extended family, neighborhood, work related). Political parties may offer greater flexibility with broader ranges of programs and options for their members. Minorities, as they become more involved, will gain influence within traditional political processes and systems. New values also will affect the workplace by placing increased emphasis on nonfinancial benefits such as day care facilities, flexible working conditions, and educational opportunities. We cannot overstate the importance for our universities of identifying and understanding these trends so that they can more productively interact with their on- and off-campus clientele and effectively meet Arizona's future needs. ■ Health and environmental issues will continue to concern our society. Changing job patterns, shifting age distributions of workers, and extended life spans will significantly affect the economy, ethics, the workplace and educational institutions. ■ Addressing the uncertainty of issues on a continuing basis will be crucial. Decision makers will have to encourage and maintain flexibility in order to react rapidly to changes within a broad mission orientation, and to remain competitive by identifying and acting upon alternative strategies.

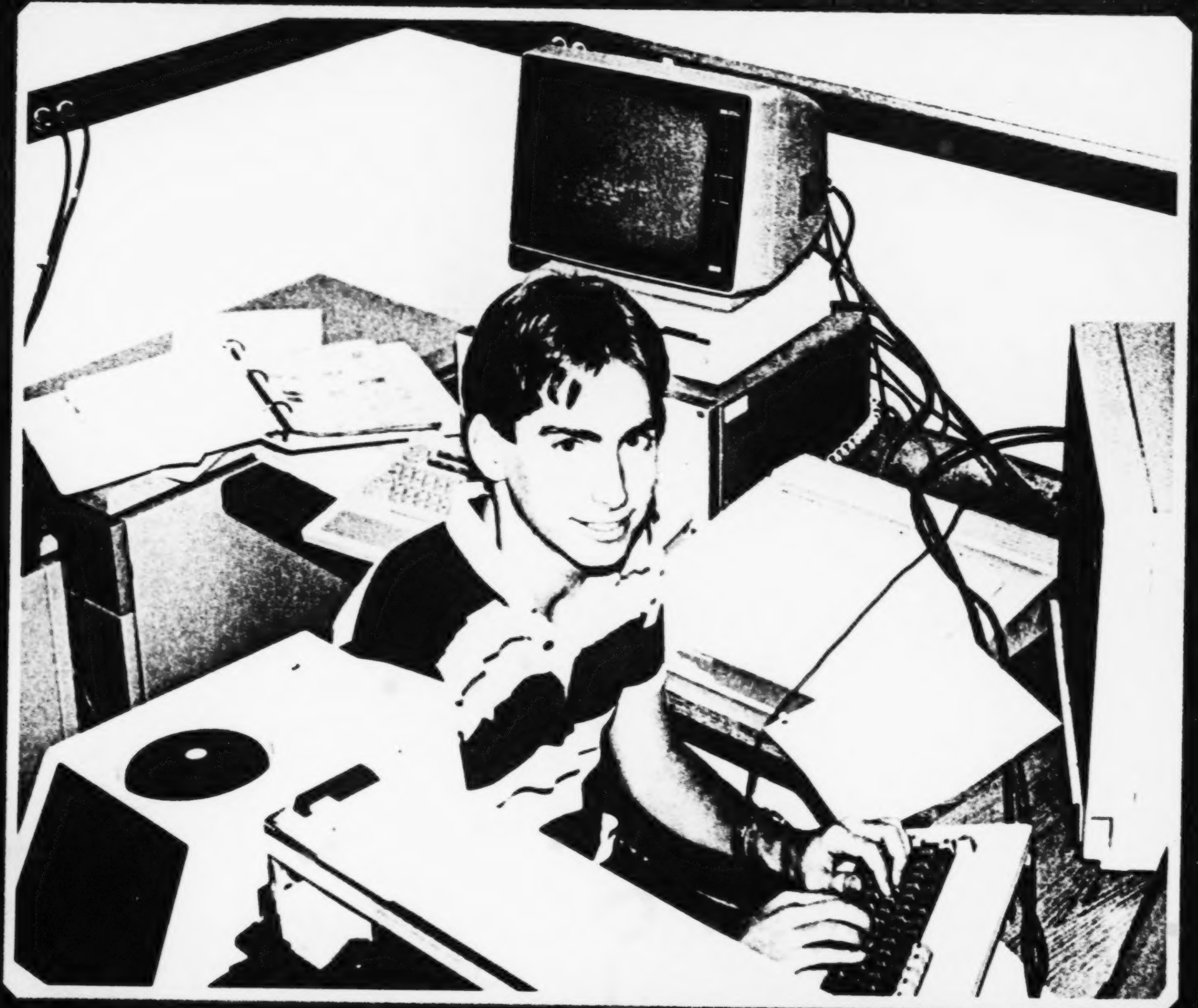
Summary of Recommendations

ETHNIC MINORITY STUDENTS

RECOMMENDATION ONE ■ The Board of Regents and the universities should establish statewide public school partnership programs in consultation and cooperation with urban and rural school districts and community colleges. The goal of the program should be to increase within five years minority students' achievement levels as measured by standardized test scores. Faculty and teachers together should develop and implement programs to raise the basic skills levels of minority students. The ten percent interval presently separating minority students from nonminority students should be cut in half during this time, with the ultimate goal being full parity in test results. (Text, page 15)

RECOMMENDATION TWO ■ Each university, in conjunction with the Board, should set five-year goals, with specific and measurable objectives, to increase the rates of Arizona resident minority student entry-level enrollment. We believe the universities can achieve a system-wide increase in underrepresented minority student entry-level enrollment at a compounded rate of ten percent per year for the next five years. (Text, page 15)

RECOMMENDATION THREE ■ The Board and the universities should set five-year goals, with specific and measurable objectives, to increase minority student graduation rates. A desirable objective would provide for a 50 percent system-wide increase in



the graduation rate of each underrepresented Arizona resident ethnic minority group by 1995. Parity with nonminority students must be the ultimate goal for minority student graduation rates. (Text, page 15)

RECOMMENDATION FOUR ■ The Board and the universities should set five-year goals for the universities, with specific and measurable objectives, to increase recruitment and retention of minority administrators, faculty and professional staff. We recognize the intense nationwide competition for qualified personnel and urge that the universities initiate special efforts to increase minority student completion of graduate and professional programs in order to increase pools of qualified minority applicants. The universities should continually seek to create working environments that enhance the career development of all employees. (Text, page 15)

RECOMMENDATION FIVE ■ The Board and the universities must take a strong leadership role in educating the public about the gravity of failing to improve minority student education in Arizona. The Board and the state should encourage the universities to: 1) develop coordinated access and retention activities within the entire Arizona educational system; 2) conduct research that will assist the state in alleviating the impact of societal problems that reduce minority education participation rates in Arizona; and 3) conduct research that will assist the universities in improving minority student recruitment and graduation rates. (Text, page 15)

UNDERGRADUATE EDUCATION

RECOMMENDATION SIX ■ ASU and UA gradually should increase freshman conditions of admission for resident students to match those for nonresidents. NAU should continue to review its admissions requirements in the context of its institutional mission and the absence of a community college in Coconino County. The Board should approve only those plans that include the implementation of programs that will assist Arizona minority students and students from rural Arizona to succeed under the plan's requirements. (Text, page 21)

RECOMMENDATION SEVEN ■ The Board should assume a strong leadership role to 1) place greater emphasis on excellence in teaching and advising of undergraduates in faculty evaluation; and 2) ensure the universities' philosophical and financial commitments to the implementation of general education reforms, especially entry-level composition and mathematics programs. We endorse the universities' proposed undergraduate outcomes assessment programs. We believe that Arizona should not implement a uniform statewide assessment program. (Text, page 21)

RECOMMENDATION EIGHT ■ The Board and the universities should develop policy guidelines to assure that the conditions of employment for temporary faculty are consistent with institutional goals of delivering quality instruction to undergraduates. Each university should improve the conditions of employment of temporary faculty, paying special attention to recruitment practices, training and orientation, work load, compensation, benefits, and departmental support. (Text, page 21)

RESEARCH AND GRADUATE EDUCATION

RECOMMENDATION NINE ▬ Arizona must encourage and increase its support for basic and applied research, scholarship and creative activities consistent with the mission and scope of its three universities as an essential complement to good teaching and as a sound investment in the state's economy and cultural life. The universities continuously must demonstrate the benefits of research, scholarship and creative activity to instruction, public service and the economic development of Arizona. Increased support, targeted to well-positioned programs, will accelerate the development of university research and bring about economic returns for Arizona. (Text, page 27)

RURAL AND COMMUNITY COLLEGE STUDENTS

RECOMMENDATION TEN ▬ The Board of Regents and the State Board of Directors for Community Colleges jointly should establish policies to achieve genuine course equivalency, to further decrease course transfer barriers between the two systems, and to eliminate unjustifiable losses of student credit hours resulting from transfers. (Text, page 30)

RECOMMENDATION ELEVEN ▬ The Board of Regents, the State Board of Directors for Community Colleges and their respective institutions should develop a joint long-range plan, with specific and measurable goals and objectives, to increase the higher education participation rates of Arizona students from rural areas. (Text, page 30)

UNIVERSITIES—A STATE RESOURCE

RECOMMENDATION TWELVE ▬ The Arizona Legislature should institute a matching grant program to fund research projects with significant potential economic benefits for the state. We recommend that the program be established in an appropriate state department or agency to make it clear that its primary focus is economic development. The state also could create a companion program to invest seed money from state funds (for example, state pension funds, lottery receipts) to encourage innovative new businesses to raise venture capital from private sources. (Text, page 34)

RECOMMENDATION THIRTEEN ▬ Each university should have a visible, centralized public service office dedicated to providing current available information relating to faculty research, expertise and economic development. Information concerning all three universities should be made more available to business and industry, government and citizens at each office. (Text, page 34)

RECOMMENDATION FOURTEEN ▬ The universities should increase the sizes of their teacher preparation programs. As university minority enrollments increase, each university should recruit additional minority students to enter its professional education program through improved financial aid and academic support programs. The Board should re-evaluate current testing programs for entrance into professional education programs to assure the absence of cultural bias. (Text, page 34)

MISSION DEVELOPMENT AND STRATEGIC PLANNING

RECOMMENDATION FIFTEEN ▬ To provide for strategic planning, the Board should develop a system mission statement to identify the role of the Arizona universities in providing higher educational services to Arizona. Existing university mission statements should be revised to provide clearer and more differential statements for each of the individual universities. The mission statements should be communicated extensively to the citizens of Arizona. (Text, page 36)

RECOMMENDATION SIXTEEN ▬ The Board and the universities should give high priority to the development of a strategic plan to accommodate the anticipated increased demand for our state's higher education services. The planning process should evaluate all relevant factors and should involve the community colleges and other appropriate university constituencies. (Text, page 36)

RECOMMENDATION SEVENTEEN ▬ The Board and the universities should utilize more intensive academic program review processes to ensure that the scope of university programs meets the expectations and the needs of the state. The Board and the universities should use the reviews to 1) identify emerging areas where new programs are needed; 2) improve program consistency and quality; 3) eliminate unnecessary program duplication; and 4) phase out unproductive programs. These reviews also should be utilized by the Board in decisions on university operating and capital budgets and in other decision-making processes. (Text, page 36)

MANAGEMENT EFFICIENCY AND ACCOUNTABILITY

RECOMMENDATION EIGHTEEN ▬ The Board should 1) proceed with a structural reorganization that more clearly defines and emphasizes the Board's policy-making role; 2) develop a management information system appropriate to its decision-making processes; 3) strengthen its strategic planning process and, through this process, develop additional measures of performance to improve accountability; and 4) strengthen the roles of the university presidents and Executive Director of the Board. (Text, page 45)

RECOMMENDATION NINETEEN ▬ The Board and the universities should evaluate the recommendations presented in the Coopers & Lybrand review of the management information, personnel, procurement, and physical plant services of the universities and the Board. The Board and the universities should implement those recommendations found to be appropriate to reach greater operational efficiencies. (Text, page 45)

RECOMMENDATION TWENTY ▬ The universities should implement Venture Teams or similar programs utilizing external expertise in the delivery of more efficient administrative services at the lowest possible cost. The universities also should implement additional employee productivity incentive programs. (Text, page 45)

FUNDING AND RESOURCE UTILIZATION

RECOMMENDATION TWENTY-ONE ▬ The Board should develop accountability measures for the state funding it receives. It should adopt strategic plans to guide funding recommendations and provide the basis for evaluating system performance. (Text, page 47)

RECOMMENDATION TWENTY-TWO ▬ The Board and the universities should 1) perform a comprehensive, comparative analysis of total faculty compensation and develop goals to raise the national competitiveness of faculty compensation; 2) work with the leadership of state government to develop realistic plans to achieve these goals; and 3) improve environmental and working conditions to increase effectiveness and efficiency of faculty and staff. (Text, page 47)

RECOMMENDATION TWENTY-THREE ▬ The Legislature should establish an Eminent Scholars Trust Fund that would match private gifts with new state funds on a formula basis to create endowments for selected eminent scholars in priority areas of emphasis and fund necessary equipment and other support for them. The Legislature also should establish a separate Major Gifts Trust Fund that would match private gifts on a formula basis with new state funds for the enrichment of key university programs in areas such as professorships, library resources, scientific and technical equipment and scholarships. (Text, page 47)

IMPLEMENTATION OF TASK FORCE RECOMMENDATIONS

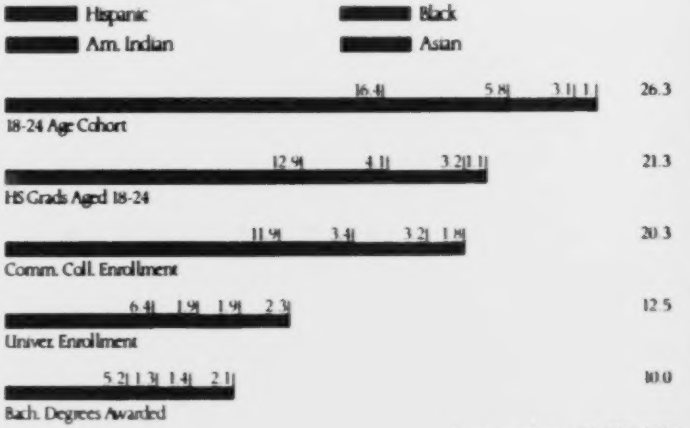
RECOMMENDATION TWENTY-FOUR ▬ The Board should establish a process to track the evaluation and implementation of the recommendations of this report and the working papers and should provide for public oversight of the process. Until the implementation is complete, the Board should issue annual reports to the state on the implementation plans, the steps taken and the results achieved. (Text, page 54)

ETHNIC MINORITY STUDENTS ■ How can Arizona increase the opportunities for minority students to realize more rewarding and productive lives through the benefits of a university education? We propose several practical, workable and affordable steps to improve educational opportunities for minority students. These proposed steps apply to all of Arizona's minority students except certain Asian groups, which take greater advantage of educational opportunities than any other group, including Whites. This report, therefore, does not address those Asian students. ■ A recent national report observed that "America is moving backward—not forward—in its efforts to achieve the full participation of minority citizens in the life and prosperity of the nation." To correct this problem, our universities must play a significant role. Arizona's demographic projections indicate dramatic increases in the percentages of two major ethnic minority groups, Hispanics and American Indians, within the next decade. Regrettably, current education patterns show major deflections of these two groups, as well as Blacks, from the Arizona educational stream. These minority student departures occur primarily during the transitions between educational levels, and produce low percentages of minorities graduating from our state universities (Figure 1). ■ We cannot attribute the lack of improvement in university minority student attendance and graduation rates to a lack of critical information or dismiss it with "a need for further study." We simply must address several known realities regarding minority students in general:

1. They are inadequately prepared in basic academic skills;
2. They are overrepresented in vocational programs and underrepresented in college preparatory programs;
3. They place a greater priority on immediate opportunities, needs and obligations than on higher education;
4. They generally receive less encouragement from family and peers for going to college;
5. They face the discouraging prospect of significant financial indebtedness as a result of college attendance.

The underrepresentation of ethnic minorities in higher education has developed into a national trend. The underrepresentation of ethnic minorities in Arizona's universities results from significant demographic shifts and from the interactions of a complex set of other factors as well. We have focused our examination on three

FIGURE 1: MINORITY PERCENTAGES in Arizona
Population and Higher Education
Fall 1986 Enrollment and 1980 Census



Source: 1980 Census, AZ ADES ABOR.

major issues: academic preparation, university recruitment and retention techniques and financial aid. ■ We clearly understand that the quality of academic preparation in the Arizona public schools plays a major role in minority student access to and persistence in our public universities. Academic preparation represents a major factor in high school completion rates and university admission. Standardized test scores provide a significant indication of academic preparedness. Using the national curve equivalent (NCE) as a standard, mean test scores in reading indicate a disparity of ten percent or more between minority students and White and Asian students:

White	55.1%
Asian	54.1%
Hispanic	45.4%
Black	44.9%
American Indian	43.2%

Minority students also test lower when enrolled in public schools with the highest concentrations of minority students. ■ Minority students do not attend or graduate from Arizona's universities at the same rates as majority students. With the exception of American Indian students at NAU, minority university enrollments are significantly underrepresented compared with high school graduation rates. These disparities are greatest for Hispanic students. ■ While the actual number of minority students in our universities has increased, minority enrollments have not increased substantially as a percent of the total enrollment at UA, NAU and ASU. The largest enrollment increase for any single ethnic group over the past five years was only slightly over one percent. The proportional representation for some ethnic groups actually has declined, and projected minority student enrollment rates are discouraging. These are disappointing results in view of the strong university recruitment programs. If current rates continue, our universities will admit 86 Whites, 7 Hispanics, 3 Blacks, 2 American Indians and 2 Asians for every 100 students enrolled for Fall, 1988. ■ During 1987, ASU awarded only 461 undergraduate degrees to minority students (8.7 percent of the total), UA awarded only 332 degrees (9.1 percent) and NAU awarded only 159 degrees (10.5 percent). Projected minority student graduation rates are as discouraging. On the basis of persistence data beginning with the entering class in 1980 at ASU and the class in 1982 at UA, average graduation rates of minority students were projected to the year 1993. Projections for students entering in August, 1988 are that 44% of the Asians, 40% of the Whites, 24% of the Hispanics, 21% of the Blacks, and only 14% of the American Indians will graduate by Spring 1993. The universities must significantly improve these rates for Arizona to remain competitive with other states. ■ We believe that Arizona's universities must recruit more minority faculty, professional staff and administrators to serve as role models and advocates for minority students. The universities must constantly seek to create a work environment that is free from bias and that provides rewarding career opportunities for minorities. Only at ASU does the percentage of total minority employees in these categories exceed the total percentage of 1986-87 minority student headcount enrollments. However, no Arizona university has an equivalent proportion of both minority employees and minority students within each ethnic group.

■ Because of the marginal economic position of many minority students and their families, financial assistance is a crucial element in their recruitment and retention. Scholarships and other nonloan aid are important prerequisites for attendance and persistence. Loans are not necessarily incentives, because of a widespread fear of indebtedness. National surveys as well as our survey of recent Arizona university alumni indicate that minority graduates earn less than their nonminority counterparts. This suggests that minority students may be less willing to incur debt to attend a university. Our minority student survey indicates that campus work is an effective form of financial aid. The universities must make special efforts to place minority students in academic work opportunities to provide them with closer academic acquaintances.

■ Our analysis of ethnic minority education should not come as a surprise to the Board of Regents. The university presidents, at the request of the Board, appointed the Arizona Universities' Study Group on Minority Student Recruitment and Retention in 1983. The Study Group recommended 19 actions to improve minority education in the state, and the Board endorsed the recommendations. A few successful programs arose from the study, but the universities did not implement a series of relatively small steps called for in the report. The discouraging statistics noted earlier reflect that inaction. The Board and the universities need committed leadership to revive and implement the report.

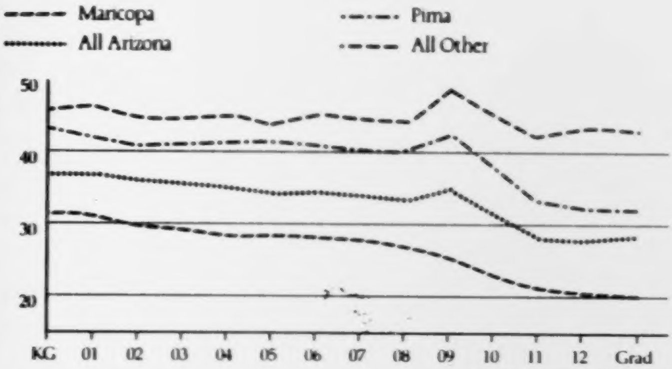
■ We believe that minority education is a function of the entire university, not just the student services units. University efforts to improve minority education require coordination, not fragmentation. Minority education is clearly an academic issue; yet the three universities have failed to involve faculty significantly in the development of meaningful academic programming for minority students. Minority education is an avowed part of each institution's mission statement, but institutional reward systems rarely recognize a faculty member's contribution to these goals.

■ Although the universities can identify many programs designed to enhance minority student retention, they generally have not adequately evaluated program effectiveness and have established too few coordinated, university-wide efforts. In addition, neither the Board nor the universities have developed clear accountability measures.

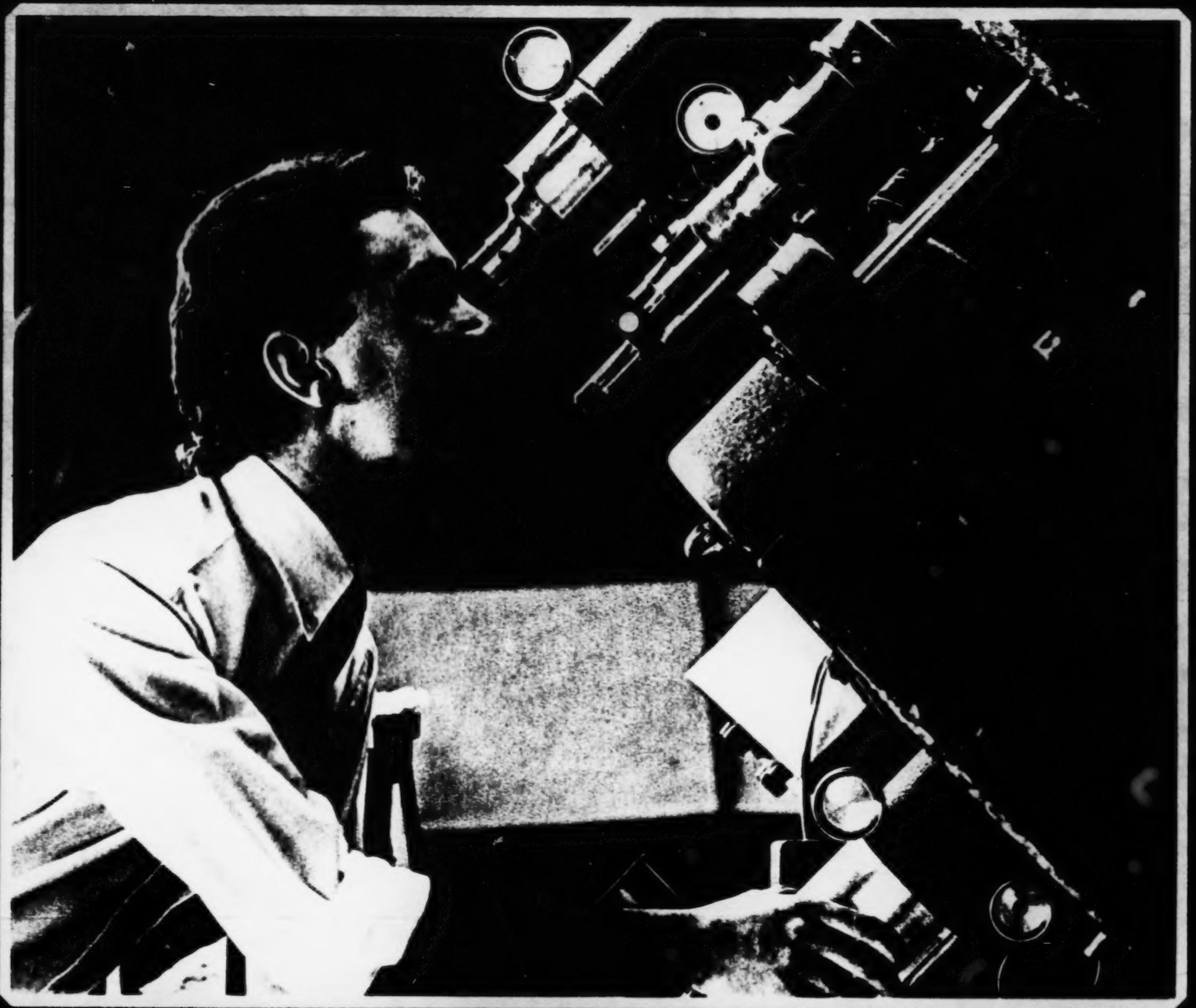
> ***We know that if we cannot improve minority representation, the social and economic results for the state may prove disastrous.***

■ We know that if we cannot improve minority representation, the social and economic results for the state may prove disastrous. We base this observation upon simple demographic trends. According to 1980 census data, there were 78,000 minority children in the age range 5-9 in Arizona. Just seven years later the number of 5-9 year-old minority children enrolled in school was 92,000. We also know the increasing ethnic composition of high school graduating classes for the next decade (Figure 2). If minority high school and university graduation rates do not improve, the state will not have the skilled management and work force required to sustain a strong economy. The Board and the universities must seriously address these demographic realities with a coherent set of initiatives containing performance measures. ■ The issues of minority education in Arizona and the appropriate responses to these issues are clearly understood. The universities must act upon this understanding and be held accountable for the outcomes. Fragmented efforts, regardless of quantity, will not suffice. The universities must assign a very high priority to minority education and effectively coordinate their energies in meeting well-defined goals and objectives. ■ The universities must take a leadership role through the development of proactive strategies that focus on elementary and secondary school and community college outreach, precollege activities and parental information, and recruitment. They must carry out sincere, sustained outreach programs involving employers, community agencies and other organizations. Arizona's community colleges can provide additional minority transfer students to our universities. Increased university outreach efforts to those institutions are essential. Efforts to increase graduation rates must address strategies that focus on the university environment, including: strong and visible support from the university presidents and central administration; high institutional funding priorities; effective programming in the nonacademic component of student development; more faculty involvement in tutoring, advising, mentoring and developmental courses; careful placement of programs in terms of reporting, responsibility and authority; and a sensitivity to cultural differences that welcomes, rather than discourages, the participation of minority students. The universities must respect differences among and within ethnic minority groups as they develop and implement each effort. ■ We base our recommendations upon the fundamental premise that Arizona cannot afford the present disparity in academic achievement among ethnic groups. To correct this disparity, minority student education must receive a very high priority at our universities. The state must commit itself philosophically and financially to assure equal educational attainment for all of its citizens at the public school, community college and university levels. In this respect, we commend the recent legislation that enhances university recruitment and retention programs for economically disadvantaged, minority and underrepresented populations. We also believe that the accomplishment of these goals will require additional state funds. ■ The Board of Regents should approve and monitor all university plans developed to implement our

FIGURE 2: MINORITY PUBLIC SCHOOL ENROLLMENT
By Grade in Various Counties
1986–1987



Source: Bartram and Gebel 1988



recommendations. The Board should approve these plans only when convinced that a coordinated, university-wide effort will be undertaken with the presidents held accountable for outcomes.

RECOMMENDATION ONE ▬ The Board of Regents and the universities should establish statewide public school partnership programs in consultation and cooperation with urban and rural school districts and community colleges. The goal of the program should be to increase within five years minority students' achievement levels as measured by standardized test scores. Faculty and teachers together should develop and implement programs to raise the basic skills levels of minority students. The ten percent interval presently separating minority students from nonminority students should be cut in half during this time, with the ultimate goal being full parity in test results.

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RECOMMENDATION THREE ▬ The Board and the universities should set five-year goals, with specific and measurable objectives, to increase minority student graduation rates. A desirable objective would provide for a 50 percent system-wide increase in the graduation rate of each underrepresented Arizona resident ethnic minority group by 1995. Parity with nonminority students must be the ultimate goal for minority student graduation rates.

RECOMMENDATION FOUR ▬ The Board and the universities should set five-year goals for the universities, with specific and measurable objectives, to increase recruitment and retention of minority administrators, faculty and professional staff. We recognize the intense nationwide competition for qualified personnel and urge that the universities initiate special efforts to increase minority student completion of graduate and professional programs in order to increase pools of qualified minority applicants. The universities should continually seek to create working environments that enhance the career development of all employees.

RECOMMENDATION FIVE ▬ The Board and the universities must take a strong leadership role in educating the public about the gravity of failing to improve minority student education in Arizona. The Board and the state should encourage the universities to: 1) develop coordinated access and retention activities within the entire Arizona educational system; 2) conduct research that will assist the state in alleviating the impact of societal problems that reduce minority education participation rates in Arizona; and 3) conduct research that will assist the universities in improving minority student recruitment and graduation rates.

UNDERGRADUATE EDUCATION ▬ How can the universities continue to improve the quality of undergraduate education? We believe they can take a series of additional steps that will reassure the state and its students alike that they hold the importance of undergraduate education in serious regard. ▬ Few topics in higher education have generated as much attention during the 1980's as the reported decline in the quality and effectiveness of undergraduate education. The information explosion of the past three decades, the extension of educational opportunities to a more culturally and intellectually diverse population of students and a growing research agenda have presented extraordinary challenges to the teaching capabilities of research universities.

Recent national studies question if universities have short-changed undergraduate education to build their research capabilities. ▬ In response to these studies and Board initiatives, several years ago the Arizona universities developed major programs aimed at enhancing undergraduate education. These initiatives resulted, in varying degrees, in the revision of some university practices. All three universities, for example, have strengthened their admissions requirements. UA has implemented successful entry-level mathematics programs. ASU has initiated a new general studies program. NAU has committed to major faculty development efforts. The three universities have strengthened their honors programs, all of which have received high marks from external consultants. ▬ In spite of these steps, however, we remain unconvinced that undergraduate education retains the priority it once held at ASU and UA. The delivery of quality undergraduate education has been the foremost commitment of NAU. Priority status to this objective extends from this institution's earliest years, and is interwoven into its heritage, present character, and potential for future success. Partial fulfillment of a mission centered on providing a high quality undergraduate experience is exhibited at NAU through fostering conditions that include a medium-sized residential campus, selective employment of faculty scholars and administrators whose primary concern is for students, and relatively small lower-division classes that primarily are instructed by full-time faculty. Even though their missions have changed over the past three decades to call for greater research, graduate and public service programs, UA and ASU must respond affirmatively to the public's demand that undergraduate education receive greater attention and support. NAU must continue its primary role as a teaching university. ▬ We have found four major obstacles to further enhancing the quality of undergraduate education: insufficient resource commitments, the faculty reward system, inadequately prepared students, and the conditions of employment for temporary faculty. Although we found an acceptable quality of instruction in junior-senior level courses and graduate courses, ASU and UA have not focused sufficient resources on the teaching of large-enrollment freshman and sophomore courses. University faculty merit systems have evolved that reward research activity and upper-division and graduate-level instruction to a much greater degree than the teaching and advising of freshman and sophomore students. ■ We believe that for the problem areas of resource commitments and faculty reward systems, a call for quantum leaps will not produce positive outcomes. Instead, the universities must develop and fully implement a series of initial, small steps. If they take these steps, the recent programs that have pointed them in the right direction will not fail and changes made to date will not become cosmetic. The universities can fully accomplish these new initiatives through resource reallocation, additional funding and increased attentiveness to program review by the Board. ■ Our universities annually admit a substantial number of students who have, at best, a modest chance for success because of their inadequate preparation for the rigors of university course work. In response to this problem, the Board adopted new policies requiring more rigorous high school preparatory courses, which took effect in Fall, 1986. UA and ASU also increased nonresident admissions standards (grade point averages, class standing or standardized test scores) effective in Fall, 1988, and have formulated plans to increase resident student entry standards in the near future. We believe that NAU should continue to review separately its entrance standards in the context of its institutional mission and the absence of a community college in Coconino County. ■ While the Task Force supports the efforts of the universities to increase the quality of entering students, we urge caution in the implementation of increased resident admissions standards without providing alternative higher education programs. Arizona has limited choices for its residents desiring baccalaureate education. We do not have a "second tier" of four-year public colleges. Minority and rural populations are underrepresented under existing academic admissions standards. Unless there is a coupling of new admissions standards with programs that assure that these groups, in particular, enter the universities and graduate in sufficient numbers, the Board and the universities will not have acted in the best interests of this state. Our universities must work cooperatively with the public schools and the community colleges to encourage and support students in their attainment of necessary entry-level skills. It is that basic. ■ The continued emphasis on undergraduate education at NAU and the resurgence of an emphasis on undergraduate education at ASU and UA resulted in part from the realization that for Arizona to compete effectively in today's economy, higher education must provide an appropriate mix of educated and skilled individuals for the work force. Arizona employers have told us that our university graduates have received very good technical training. They have less enthusiasm, however, when rating their human relations and communications skills, their flexibility in thinking, and their ability to adapt to the business environment. In order for our graduates to compete successfully, they no longer can attend a university only to obtain a narrow body of knowledge or a specialized set of skills. The rapid appearance of new industries and new social problems requires graduates with the ability to adapt to new needs and demands. Our universities should establish goals to produce graduates who have confidence, who can adapt to change, who can innovate and who view education as a lifetime endeavor rather than a finite process merely directed toward obtaining a degree. ■ We support the recent efforts of the universities to develop coherent and goal-oriented general education requirements. We believe that greater resources are required, particularly at ASU, to produce adequate levels of writing and mathematical competence, so as to reflect the importance of these programs in the general education of our students. Furthermore, we question the commitment of the state and the universities to funding the full implementation of other aspects of a rigorous general education program. Additional funding will be needed to provide the faculty and support resources required to strengthen undergraduate education. The Board and the Legislature, in consultation with the public, must attack this issue and make appropriate resource allocation decisions. ■ The conditions of employment for temporary faculty, including graduate teaching assistants, provide additional barriers to improved undergraduate education. Temporary faculty are an important and necessary component of the university teaching force. If properly supported, they can be as effective teachers as tenured and tenure-eligible faculty. Yet in Arizona, and the rest of the country, employment conditions of temporary faculty are poor. This impacts negatively upon the quality of undergraduate education that our students should consistently expect to receive. Temporary faculty receive inadequate compensation and much too heavy course load assignments. With few exceptions, they suffer from hiring procedures that keep them waiting until the last possible moment, inadequate secretarial support and a lack of supplies. We have found this ill-treatment of temporary faculty at all three Arizona universities, particularly in the critical entry-level composition and mathematics programs. ■ Finally, we examined the issue of how to assess the universities' progress toward better educating undergraduate students. Traditionally, institutions of higher education have defined their effectiveness by measures such as national reputations, funding levels, student credit hours produced, numbers of degrees granted, library holdings and student-faculty ratios. More recently, national studies and accrediting agencies have called for a new set of measures that focus on the outcomes of the educational process. These measures most often take the form of standardized test scores at entry, mid-point or graduation from a university. They are powerful tools that can measure the effectiveness of curriculums in achieving their goals. Universities can utilize them to determine whether students can demonstrate a mastery of basic skills. Data from these measures also can provide a basis for improving communications to external constituencies regarding educational improvements and future funding. ■ Nationally, enough successful assessment programs exist to identify their common features:

1. They have a specified office or individual assigned with coordinating responsibilities;
2. They include basic skills testing in reading, writing and mathematics for entering freshmen;
3. They evaluate the effectiveness of general education by examining student development in integrative skills such as critical thinking, problem solving and leadership;
4. They evaluate the effectiveness of instruction in the student's major field;
5. They determine student satisfaction and behavior through periodic surveys;

ARIZONA STATE UNIVERSITY
· 1885 ·
GREAT SEAL OF THE STATE OF ARIZONA
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47

6. They are established by criteria matched to the differing characteristics of each institution.

The Board called for the universities to develop comprehensive plans for assessing and evaluating undergraduate programs. The universities already have submitted those plans to the Board, and they contain all six of the above noted common features. Importantly, in our judgment, these plans do not recommend a uniform statewide assessment program. Evidence from other states suggests that results do not justify the costs of implementing statewide plans, which do not reflect important institutional differences. Local programs reflecting institutional ownership and commitment have far greater implementation rates and successes than statewide plans. Our universities' plans are strong and should be implemented. As with their general education plans, however, the Board and the Legislature must insist that resource allocations and accountability measures reflect the importance of assessment.

RECOMMENDATION SIX — ASU and UA gradually should increase freshman conditions of admission for resident students to match those for nonresidents. NAU should continue to review its admissions requirements in the context of its institutional mission and the absence of a community college in Coconino County. The Board should approve only those plans that include the implementation of programs that will assist Arizona minority students and students from rural Arizona to succeed under the plan's requirements.

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RESEARCH AND GRADUATE EDUCATION — What is the role for research efforts at the Arizona universities? Does the overall quality of graduate education fulfill student expectations and prepare students for their professional careers? We believe that research, scholarship and creative activity in the sciences, humanities, fine arts and professional schools are essential components of a university and maintain the currency and vitality of undergraduate teaching. We also believe that the presence of research activity and the existence of research requirements are essential to the quality and credibility of graduate degree programs that continue to graduate satisfied, competitive alumni. ▬ Along with concerns about the quality of undergraduate education, the role of research at Arizona's public universities has been publicly questioned in recent years. Critics have argued that there is a basic dichotomy between the university functions of transferring knowledge (teaching) and discovering knowledge (research and scholarship). But we feel, along with many in our universities, that a false dichotomy casts these activities into opposition. We strongly support a proper synergistic relationship, with research enhancing teaching effectiveness and informed teaching spurring the process of discovery. The debate has escalated along with the development of research in the three universities (Figure 3).

FIGURE 3: EXTERNAL RESEARCH SUPPORT

	UA	ASU	NAU
1978	38,117,746	13,347,695	
1979	51,654,679	15,472,507	
1980	54,593,961	15,679,281	
1981	61,818,869	19,418,575	715,500
1982	67,264,185	20,797,759	906,900
1983	60,379,067	19,538,758	1,067,900
1984	78,168,933	27,529,190	1,667,200
1985	87,984,571	29,303,203	1,291,700
1986	99,637,159	33,465,092	1,325,600
1987	118,009,779	39,220,142	3,389,300

It remains the responsibility of the universities to demonstrate their commitment to this ideal balance. ▬ The University of Arizona has developed into a major research institution. Its departmental programs and organized research centers include many of international repute. With a history of external research support dating back to 1890, UA now draws 78 percent of its research support from external agencies. In 1985-86, the latest year for which national comparison is available, UA ranked 20th among all universities, both private and public, and 13th among public institutions in its total expenditures for research and development, thus making the University of Arizona "competitive with the best public universities in the nation," in fulfillment of its current mission charge. With a state investment of $34 million in organized research for Fiscal Year 1987, research activities at UA provided $154 million in expenditures, and a major infusion of jobs and purchasing power. ▬ UA's research strength was convincingly demonstrated this year in a quick succession of extremely competitive awards. These included the establishment of three national research centers: a NASA Space Engineering Research Center, an NSF Biological Center for Insect Science, and the Sematech Center of Excellence for Contamination/Defect Assessment and Control. ▬ Arizona State University has successfully pursued its stated mission to "develop as a major research university." As measured by a comprehensive index developed by two UA researchers, ASU moved from 104th place in 1980 to 63rd in 1985—the greatest improvement of any of the 200 research universities surveyed. It has an impressive record of increased external research support over the past decade, from $9 million to $39 million. With a state investment of nearly $8 million in organized research for Fiscal Year 1987 and 78 percent of its research support from external agencies, ASU research also creates a significant economic impact. ▬ Much of ASU's research has focused on its Engineering Excellence program and activities in the basic sciences, but the attitude that underlies research has been much more pervasive and the transformation more widespread than the areas of science and engineering alone. ▬ Although Northern Arizona University very successfully concentrates on undergraduate education and graduate instruction in selected areas, it also emphasizes the need for faculty to stay current in their disciplines and for the most able undergraduate students to gain experience in active research. It also has experienced a steady increase in external funding for research in the 1980's. External sources provided NAU with $3.4 million in research awards for Fiscal Year 1987 and state support was proportionally higher at $1.7 million, figures in keeping with NAU's mission, emphasizing "excellence as a teaching institution" with "special research and public service roles relating to northern Arizona." ▬ These flourishing research programs, particularly in science and engineering, may require substantial investments, but they also promise tangible benefits from basic and applied research, through technology transfer and entrepreneurial activity, and most importantly, by attracting new industry to Arizona. We also believe that our universities must continue to support scholarship in the humanities, creative projects in the arts and innovation in the practice of the professions. They are as essential to the total educational mission and as worthy of support as science and engineering. ▬ What graduates think about their instruction is no less important in determining the quality of graduate education than are the research awards, honors and distinctions received by the faculty. A survey of 1976 and 1986 doctoral graduates at all three universities indicates strong approval of their doctoral programs and their supervising professors. The respondents also registered strong beliefs that they compete effectively with doctoral graduates of other universities. ▬ We have concluded that the current roles for research, scholarship and creative activities in our universities are appropriate and essential for numerous reasons:

1. They contribute to the transfer and promotion of knowledge in the classroom, the discovery of new knowledge in the laboratory and the exploration of new avenues of aesthetic expression in the studio and workshop.
2. They serve the interests of the state in a myriad of ways and provide numerous economic benefits.
3. They help attract better faculty and students.

> ***Critics have argued that there is a basic dichotomy between the university functions of transferring knowledge (teaching) and discovering knowledge (research and scholarship). But we feel, along with many in our universities, that a false dichotomy casts these activities into opposition.***

Like other states' task forces, we have found it difficult to measure these outcomes. Yet, we have found no evidence from our surveys or studies to support any negative concerns for the research role of our universities. On the contrary, over the past ten years, the state's investment in research has not increased as a percentage of total appropriations. The universities continue to attract increasingly able faculty and graduate students, which has produced major increases in external support. External research grants have funded skilled personnel and new equipment, and created better institutions than the state could otherwise afford. The multiplier effect of these grants on the Arizona economy has had a major positive impact. ■ Social change, scientific discovery and technological advances have altered the character and contour of American higher education in the past generation. Arizona's universities have played major roles in this process of change. The standards for faculty employment and promotion have changed correspondingly. ■ In our view, the "back to basics" advocates should not compel the universities to back into the future. Instead, the universities must act upon all facets of their missions and goals. They should call for and reward better balanced individual contributions to teaching, research and service. This act would go far toward changing perceptions that our universities have neglected teaching and related attention to students in the quest for higher research status.

RECOMMENDATION NINE ■ Arizona must encourage and increase its support for basic and applied research, scholarship and creative activities consistent with the mission and scope of its three universities as an essential complement to good teaching and as a sound investment in the state's economy and cultural life. The universities continuously must demonstrate the benefits of research, scholarship and creative activity to instruction, public service and the economic development of Arizona. Increased support, targeted to well-positioned programs, will accelerate the development of university research and bring about economic returns for Arizona.

RURAL AND COMMUNITY COLLEGE STUDENTS ■ How can Arizona increase university opportunities for rural and community college students who can benefit from a university education? As with ethnic minority opportunities, we propose practical, workable and affordable steps to move forward. ■ Arizona is characterized by its large geographic size and the high degree to which its population is concentrated in two metropolitan areas—Phoenix and Tucson. One-fourth of the population, however, is widely dispersed, and only one other incorporated community, Yuma, has more than 40,000 people. Community colleges primarily serve this portion of the state. Even with NAU's enviable success in upper-division and graduate instruction in rural areas and the recent NAU and UA initiatives in Yuma and Sierra Vista, respectively, a substantial geographic portion of the state remains without the equivalent educational services provided by the universities to urban areas. ■ To solve this problem, Arizona's universities must eliminate barriers and mobilize resources to develop a system that will widely disseminate their programs. Modern communications technology currently offers the means for outreach systems that would put university services into each county of the state. Placebound students could pursue an education beyond the community college level, small businesses could have access to technical information and consulting services, and the UA Cooperative Extension Service could strengthen its programs in every county. We support the formation of the Arizona Telecommunications Cooperative, a collaborative effort of the Arizona universities, community colleges, public school districts and Department of Administration, to provide expanded

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off-campus educational services through the use of a statewide educational telecommunications network. ■ Proximity to educational opportunity influences people's decisions to pursue collegiate level education in Arizona. In 1986, 33 of every 100 Maricopa County high school graduates enrolled in the community colleges of the Maricopa District the following Fall and 21 attended the state universities. Twenty-six of every 100 Pima County graduates enrolled in the community colleges of the Pima District, and 27 attended the state universities. All of the other counties enrolled 15 students per 100 graduates in community colleges, and 14 in state universities. These participation totals, Maricopa County (54), Pima County (53) and all other counties (29), illustrate that high school graduates from rural Arizona do not participate in postsecondary instruction in proportionate numbers. We must reverse this significant loss of human talent. ■ Arizona has one of the most comprehensive systems of community colleges in the nation. Our community colleges enrolled 34,739 full-time and 101,517 part-time students in 1986-87. The community colleges serve as an important source for undergraduate students entering the three universities. Almost 4,000 new students transferred to the three universities in the Fall, 1987. Many university students also transfer to the community colleges. A great need exists for the coordination of offerings among the three universities, the nine public community colleges and Navajo Community College in order for students to utilize their time and institutional resources efficiently. ■ We support the extensive and continuing efforts to improve the transferability of credits between the two systems. A Course Equivalency Guide now provides information on courses at each community college and the "equivalent" university courses. This information helps assure that students may transfer without a significant loss of credit. Faculty from both systems need to maintain continuing contact in order to assure sufficiently similar course content. Both systems need presidential leadership to resolve particularly difficult credit transfer issues. ■ Since we began our study, we have witnessed better coordination between the community colleges and the universities to assure that the lower-division general education courses for the Associate of Arts (A.A.) degree meet equivalent requirements for lower-division general education at the universities. A wide range of from 25 to 41 total general education credit hours required by the ten community colleges for the A.A. degree has now narrowed significantly to a range of from 37 to 44 hours. The number and distribution of courses satisfying the general education requirements of the universities also vary. If the community colleges could further agree on a minimal number and a uniform distribution of general education courses, it would encourage the universities to recognize the two-year degrees as meeting their lower-division general education requirements.

> ***Modern communications technology currently offers the means for outreach systems that would put university services into each county of the state.***

RECOMMENDATION TEN ■ The Board of Regents and the

State Board of Directors for Community Colleges jointly should establish policies to achieve genuine course equivalency, to further decrease course transfer barriers between the two systems, and to eliminate unjustifiable losses of student credit hours resulting from transfers.

RECOMMENDATION ELEVEN ▬ The Board of Regents, the State Board of Directors for Community Colleges and their respective institutions should develop a joint long-range plan, with specific and measurable goals and objectives, to increase the higher education participation rates of Arizona students from rural areas.

UNIVERSITIES—A STATE RESOURCE ▬ How well do the current missions, responsibilities and scope of programs of the universities and the Board enhance the competitive position of the state? We conclude that they must do a better job of helping Arizona capitalize on opportunities that will arise between now and the turn of the century. ▬ In the area of economic development, other states may lead Arizona by as much as a decade because they already have capitalized upon the relationships between regional economic growth and the technological offshoots of academic research. Localities such as Silicon Valley in California, Route 128 in Massachusetts and the Research Triangle in North Carolina have established bases for beneficial cooperation between universities and firms on the cutting edge of contemporary technology. In these states, the opportunities for encouraging faculty entrepreneurship have multiplied. Arizona's recent "near misses" with US West and Sematech emphasize how much our universities have helped to raise the state to a competitive status and the keenness of the competition. ▬ Our universities hold the key to these types of economic possibilities and to other areas of economic development. The UA has formed The Karl Eller Center for Private Entrepreneurship, Arizona Technology Development Corporation (ATDC) and an Office of Technology Transfer, and has developed a cooperative arrangement with Research Corporation Technologies, Inc. UA faculty filed 41 disclosures of inventions in 1987 alone. Since its creation in 1986, ATDC has developed 11 knowledge-intensive companies. The UA Optical Sciences Center has realized great successes in the transfer of scientific discoveries and technological improvements into commercial applications. Six companies formed by present or former Center faculty have had a significant impact on employment, spending and taxes in Tucson. ▬ ASU has high hopes for its new Arizona State Research Institute, which will pursue many of the same goals as ATDC in Tucson. The ASU Research Park continues to energetically seek industrial tenants and affiliates. The Hahn Center for Entrepreneurship and Innovation holds forth promise as an incubator facility for new businesses. The success of ASU's Engineering Excellence Program has encouraged other potential spurs to economic development. Through endeavors such as the Center for American Indian Economic Development and the Bureau for Forestry Research, NAU contributes to the competitive development of rural enterprises in the state. ▬ The universities cannot effect such potential economic benefits without extensive state and local cooperation. To achieve their potential, they must develop new relationships to meet state and local needs halfway. The Board can continue to encourage technology transfer policies that remove barriers and encourage partnerships outside the campus walls. The state should consider instituting a new program to match federal and corporate research investments for the development of projects of potential economic benefit to Arizona. Other states house such programs in an agency separate from their university systems to indicate clearly that expenditures provide support for economic development, not increased aid to higher education. ■ The state also should consider providing seed money to enable innovative enterprises to attract venture capital from private investors. Many other states invest small fractions of state pension funds, lottery receipts or other nonappropriated state funds in venture capital projects. Businesspersons and university research faculty in these other states have contributed to and benefited from the success of these programs. ■ During the past decade, several states and their universities have had the foresight to realize that individual faculty members can be important resources in economic development, particularly in rural areas. Nationwide, universities have established offices to provide economic development information and advice to citizens and organizations. These offices serve their communities by accessing data bases of systemwide faculty expertise, current research projects and national and international data sources. ■ These efforts must unite with other efforts to improve the competitiveness of the state: maintaining a high quality public school system, supporting the institutional activities that serve aesthetic and humanistic needs, preserving an attractive and healthful physical environment, and providing the public services essential to a contemporary, civilized society. These factors have proven to be the key ingredients in recruiting and retaining a productive faculty and in attracting new industry to the state. ■ We believe that more effective cooperation and coordination will be required in the future if Arizona is to achieve a fully competitive national and international position. The Board, its universities, local economic development agencies and state government must work harder, together, one small step at a time. ■ A final issue of state competitiveness that has implications for undergraduate education and minority student access is the preparation of elementary and secondary teachers. A significant number of Arizona's public school teachers will retire within the next five to 15 years. Because of this and because of Arizona's continued growth, the state will have to meet a continuing demand for new teachers throughout the next decade just to maintain the current public school teacher-student ratios. The ethnic make-up of Arizona's teachers also will be increasingly important. Ethnic minority teachers serve as role models and thus help reduce the number of students leaving school prior to graduation. With the coming changes in the ethnic compositions of elementary and secondary student bodies, the ethnic make-up of their teachers must change. Yet, the current 11 percent minority composition of Arizona's public school teaching staffs has not changed over the past six years. ■ Out-of-state recruitment will

Our universities hold the key to...economic development.

not suffice to meet Arizona's needs. Arizona competes with other sunbelt states for qualified out-of-state applicants, especially those with bilingual abilities. It appears unlikely that we can attract sufficient numbers of minority teachers to Arizona to meet our needs. ■ Arizona's universities must produce more teachers. The number of students graduating with degrees in education is small compared to Arizona's needs. At present, our universities have produced approximately one-half of Arizona's teachers. Projections indicate that 3,141 teaching positions will open in Fall, 1988. Yet, only 1,681 students served as practice teachers in Arizona schools in 1986-87. We believe that professional preparation for teaching should be available to every qualified Arizonan who desires it, with particular efforts made to increase the number of Hispanic and American Indian teachers. In order to accomplish this, the universities must increase the sizes of their teacher preparation programs. Should the universities' minority undergraduate recruitment and retention efforts prove successful, the pool of minority candidates for the Colleges of Education should increase. ■ The number of minority teachers is also affected by the criteria for entrance into professional education programs. The state's new requisite criteria have had a disproportionately negative impact upon minority candidates. Despite the criteria having been validated, the differential results suggest the need to reexamine for potential cultural bias and the need for major remediation efforts to better prepare minority students for teaching careers.

RECOMMENDATION TWELVE ■ The Arizona Legislature should institute a matching grant program to fund research projects with significant potential economic benefits for the state. We recommend that the program be established in an appropriate state department or agency to make it clear that its primary focus is economic development. The state also could create a companion program to invest seed money from state funds (for example, state pension funds, lottery receipts) to encourage innovative new businesses to raise venture capital from private sources.

RECOMMENDATION THIRTEEN ■ Each university should have a visible, centralized public service office dedicated to providing current available information relating to faculty research, expertise and economic development. Information concerning all three universities should be made more available to business and industry, government and citizens at each office.

RECOMMENDATION FOURTEEN ■ The universities should increase the sizes of their teacher preparation programs. As university minority enrollments increase, each university should recruit additional minority students to enter its professional education program through improved financial aid and academic support programs. The Board should re-evaluate current testing programs for entrance into professional education programs to assure the absence of cultural bias.

MISSION DEVELOPMENT AND STRATEGIC PLANNING ■ How well do the current missions, programs and strategic plans of the universities meet the needs of the state? We conclude,

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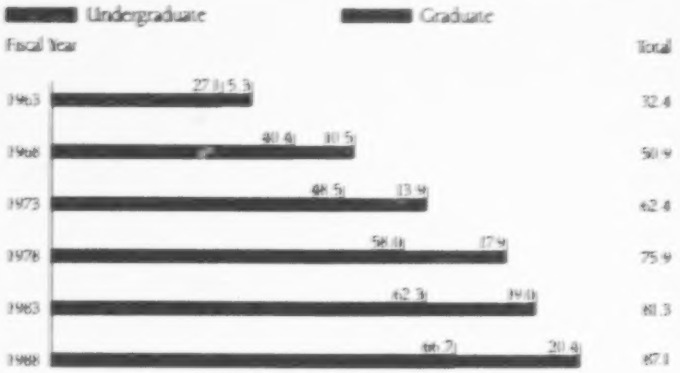
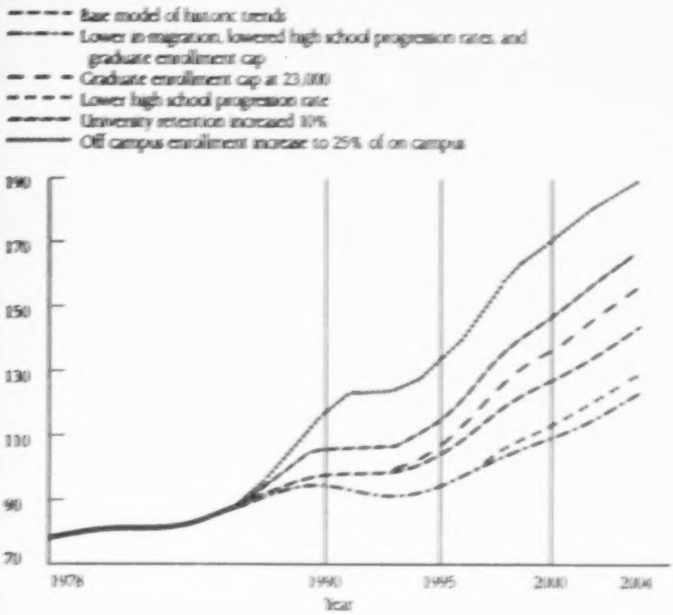
"not well," if they continue to duplicate programs rather than to develop their strengths as distinctively different institutions. ■ A critical issue facing Arizona higher education is the need to clarify, integrate and communicate the missions of the Board and the universities. The Board has yet to state specifically what it expects from the universities and has yet to develop a statewide mission statement. The current university mission and scope statements, last revised in 1983, are broad, vague and too aspirational. Early drafts of new statewide and university mission statements contain many of the same weaknesses. The Board must ensure that all of the new statements are as clear and precise as possible. The Board and the universities must complete this difficult task before they can progress to detailed planning activities. ■ As noted in the introduction, the state has finite resources to support public higher education. It requires an improved process to direct the limited human and financial resources to those programs and activities most crucial to Arizona's needs. Toward this end, the Board of Regents last year initiated a strategic planning process designed to produce informed, selective resource allocation decisions. ■ Historically, the Arizona universities have developed long range, but not strategic planning activities that have particularly focused on relatively small annual program changes. These processes, level of detail and discussion methods vary at each university. ■ Strategic planning, a relatively new process in higher education, pays particular attention to the external environment of universities. It provides the means to evaluate institutional strengths and weaknesses, and identifies selected areas where major resource expenditures should occur. ■ Institutions that have seriously followed a strategic planning process have successfully achieved their goals, sometimes even under adverse financial conditions. Others simply have added another layer of administration. The Board must proceed with caution in order to prevent its new process from lapsing into the latter category. ■ We believe that the strategic planning process is just as important as the plan itself. A successful strategic plan will produce the benefits of broad communication and commitment by senior university administrators developed within the process itself. If the mission statements point the universities in the right direction, they can more effectively deal with the inherent unpredictability of events over the next decade. For the process ultimately to succeed, the Board and the universities must incorporate a broad understanding of external needs and trends, objectively evaluate strengths and weaknesses, and truly develop strategic choices while remaining open to strategic opportunities. If the process simply generates an institutional "wish list" or if administrators do not widely communicate the process and results to institutional constituencies, then it will not succeed. ■ Our universities have succeeded in moving to greater levels of maturity during the last three decades. The economic, demographic and technical changes anticipated during the next decade will require different strategies dependent upon strong management actions, instead of the independent identification of opportunities and isolated actions. Strategic planning time frames should cover fairly short durations of time, perhaps three to five years, but the institutions should develop them within long-term institutional visions and external realities of the next ten to fifteen years. ■ One cause for concern with the Board's current deliberations on revised mission and scope statements arises from our sense that the universities will become more and more alike, and the state risks losing unique institutions that have served it so well. We believe in the need for two major research universities to place Arizona in a more competitive position during the coming decade. We also find equal importance in the continued existence of a mid-sized, high quality undergraduate institution. The Board must resist pressures resulting from successes over the past 30 years that would create unnecessary duplications of effort not in the best interests of the state. A responsible planning process offers the best hope for avoiding that trap and assures that in the future the Board will focus additional resources on priority programs. ▬ Another concern we have with the Board's current deliberations on strategic planning is the absence of a plan to accommodate the anticipated growth in students between now and the year 2000. During the past two academic years, undergraduate headcount enrollment increased at ASU from 29,878 to 31,133 and at UA from 23,943 to 25,354, placing them among the largest of universities in their respective categories. Undergraduate enrollments at the NAU campus have remained relatively constant for the past decade (Figure 4). Arizona public school enrollments indicate a gradual decline in high school graduates through 1994. Significant annual increases, however, will follow through 2000 and beyond. Projections of the total increase in undergraduates vary from 20,000 to 30,000 by the year 2000, and three-fourths of that increase represents high school graduates from Maricopa and Pima Counties (Figure 5). ▬ Some increases in the numbers of university transfers from the Maricopa Community College District could be accommodated by further developing the upper-division and graduate campus of ASU West. However, without the addition of physical facilities at all three universities or the development of other alternatives, Arizona will not be prepared for the anticipated increased demands for post-secondary education. The Board and the universities must develop a strategic plan to satisfy the anticipated increased demand for higher education services. This plan must confront the issue of the proper size of each campus. Our surveys of the Arizona public, university alumni and students suggest that at the very least an intuitive belief exists that our three main campus institutions may be close to reaching optimum size for their respective missions. Can the main campuses grow without changing the character of the institutions and without degrading the quality of undergraduate education? The Task Force spent considerable

FIGURE 4: ENROLLMENT, UA Main Campus, ASU Main Campus, NAU
Total Student Headcount, Graduate, and Undergraduate Enrollment in Thousands



time discussing this difficult and complex issue. It is complicated by the method of appropriating state funds to accommodate growth in enrollment. The so-called "22-to-1 formula" funds an additional faculty position for each new 22 students that enroll in one of the state's universities. While changes were made in the last Legislature, even the new formula does not provide adequate funding for support staff or for the resources or infrastructure required by additional enrollment. The funding for growth on the margin rather than on a unit cost basis almost forces the least costly alternative. ■ The difficulty in obtaining adequate funding for ASU West raises justifiable concerns about how the establishment of other branch campuses might impact funding for the main campus in a time of limited state revenues. The reduction of funding for decreases in enrollment also poses difficulty in maintaining and improving the quality of undergraduate education. Should steps be taken to limit enrollment at any university, subsequent reduction in funding could pose difficulties for the Board and the institution. ■ Because of the lead time required to develop physical facilities, whether it be at the main campus or through the establishment of new branch campuses, the Board and the universities must give this matter the highest priority. The strategic planning process should evaluate, among other factors:

FIGURE 5: TOTAL ENROLLMENT AT ARIZONA UNIVERSITIES
Actual 1978–87, Projected 1988–2004 in Thousands



1. Current enrollment distribution and characteristics at each campus.
2. The stated educational mission of each institution.
3. The enhancement of the quality of undergraduate and graduate education on each main campus.
4. Land use and physical facility opportunities or restrictions.
5. The balance between resident and nonresident undergraduate enrollments and the residential character and available housing on each campus.
6. The capacity of community colleges to provide additional educational services.
7. The potential for the effective use of communications technology.

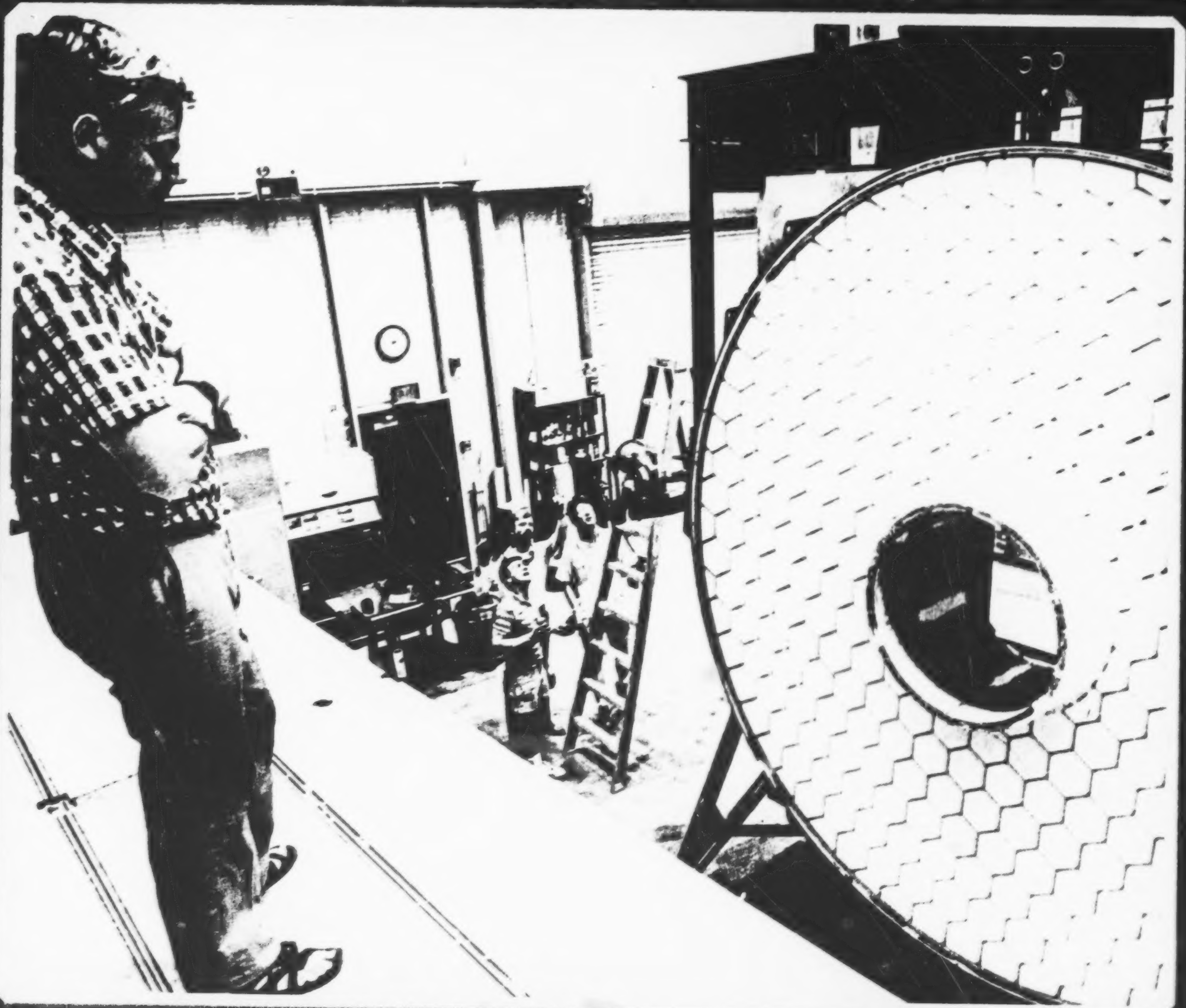
8. The economic consequences for each university, its communities and other constituencies of expanding the main campus or developing additional campuses.
9. Optimum enrollment levels and enrollment management techniques for managing enrollment to these levels.
10. Funding criteria that will provide appropriate incentives to support the strategic plan.

The planning process should involve the community colleges and appropriate representation from each university's constituencies. ■ In the meantime, we believe that the Board should promptly initiate with ASU the planning for an additional upper-division and master's degree branch campus or learning centers in Maricopa County to accommodate enrollment increases projected by the year 2000. ■ Program review represents a final step to assure that the scope of university programs meets the needs of the state. Since 1975, a Board policy has required all academic departments to undergo a substantial review process every ten years. The intent of this formal and systematic process is to assure that university curricula match ongoing program needs. The process begins with university faculty and ends with Board review. The policy also requires the use of independent outside consultants. The process has the potential to strengthen academic programs, remove marginal or nonessential programs and increase accountability to higher education constituencies. Unfortunately, the effectiveness of the program is uneven throughout the state. ■ We believe the Board should shorten the program review cycle from ten to seven years to deal more effectively with declining programs and to more fully recognize emerging programs. The Board also must monitor the processes more closely to ensure communication and followup on review policies and the utilization of objective external consultants. Current academic program reviews focus too much on resource acquisition at the expense of program improvement analysis. With a greater focus on the latter approach, the universities can more effectively utilize program reviews for university planning and resource allocation.

A critical issue facing Arizona higher education is the need to clarify, integrate and communicate the missions of the Board and the universities.

RECOMMENDATION FIFTEEN ■ To provide for strategic planning, the Board should develop a system mission statement to identify the role of the Arizona universities in providing higher educational services to Arizona. Existing university mission statements should be revised to provide clearer and more differential statements for each of the individual universities. The mission statements should be communicated extensively to the citizens of Arizona.

RECOMMENDATION SIXTEEN ■ The Board and the universities should give high priority to the development of a strategic plan to accommodate the anticipated increased demand for our state's higher education services. The planning process should evaluate all relevant factors and should involve the community colleges and other appropriate university constituencies.



RECOMMENDATION SEVENTEEN ▬ The Board and the universities should utilize more intensive academic program review processes to ensure that the scope of university programs meets the expectations and the needs of the state. The Board and the universities should use the reviews to 1) identify emerging areas where new programs are needed; 2) improve program consistency and quality; 3) eliminate unnecessary program duplication; and 4) phase out unproductive programs. These reviews also should be utilized by the Board in decisions on university operating and capital budgets and in other decision-making processes.

MANAGEMENT EFFICIENCY AND ACCOUNTABILITY ▬ How can the universities and the Board improve their operating efficiency? We, along with the Coopers & Lybrand management audit of the Board central office and the three universities, have found no evidence of systemic or widespread inefficiency. We conclude, however, that any organization, public or private, that receives over $1 billion in funding can take additional steps to achieve greater efficiencies. We should not alter the constitutional autonomy granted the Board that has allowed our universities to flourish. We also conclude that the Board should not reduce the administrative flexibility of the universities since this has permitted the effective use of resources. We do, however, recommend other changes that offer potential for improved efficiency. ▬ The management audit conducted for the Task Force by Coopers & Lybrand concluded that "Arizona's public university system is grounded on the enviable competitive strengths of institutional autonomy, popular support, a single well-empowered governing board, and increasing national recognition." They further concluded that organizational and decision-making problems at the Board level and stress between the Board office and the universities hindered the exploitation of these strengths. ▬ They specifically concluded that the respective roles of the university presidents and the Executive Director of the Board need clearer definitions and that the function of the Council of Presidents (composed of the three university presidents and the Executive Director) also requires definition. They observe that the "system level decision-making processes are overly rule-bound, cumbersome and inefficient." Further, "inadequate delegation of authority from the Board to the university presidents" results in the Board becoming involved in detailed internal issues more appropriate for institutional management. ▬ The Task Force concurs with these observations and believes that the Board should undertake a critical analysis of its own organizational structure with a view toward reducing the number of its committees. Furthermore, the Board should receive reports and recommendations for action only from the Council of Presidents or the Executive Director and the Presidents acting for the individual institutions. Although the Board has its origins in Article 11 of the State Constitution, its governing authority is found in a body of statutes that grant it a great deal of authority but fail to provide any guidance in terms of the delegation of Board responsibilities to university presidents. Additionally, the Legislature has granted no authority directly to the university presidents or other administrative officers, so their authority must emanate from the Board. Based upon historical legal precedent, the Board could delegate some of its authority to university officials, provided that it establishes criteria for use in exercising this authority. The Board also should delegate more authority to the Council of Presidents. The implementation of appropriate means of accountability will result in the Board devoting more of its limited time and staff resources to major policy and planning issues. It also should periodically review the results of its policies and guidelines.

We also concur with the conclusions of Coopers & Lybrand that the Board should develop a more comprehensive set of performance-based outcomes to measure progress toward the achievement of Board and university objectives. The Board must develop accountability for the state funding it receives and link performance to the strategic planning process. The Board must utilize modern management information systems to support timely operational decisions and strategic choices, and should develop and maintain a limited database to analyze aggregate data developed by the universities.

Coopers & Lybrand also examined selected administrative systems of the three universities. They noted, "We found dedicated, highly capable and energetic managers...who were devoting enormous amounts of time, energy and talent in efforts to solve the day to day problems and issues facing these complex institutions." Nonetheless, they recommend improvements in procurement processes and the management of physical and human resources which will lead to increased client responsiveness, reduced paper work, and better work standards. They believe an adequate management information system for each university and the Board will lead to better decisions at the campus level and more effective conclusions by the Board. If they had a general criticism of management efficiency, it was that the universities' administrative information systems, as a rule, do not provide users with timely and accurate information. This lack of information has forced departments to develop and maintain their own duplicative records, especially in research-active departments where requirements for timely and accurate information are absolutely crucial for the responsible management of state, local and grant/contract funds.

The universities should seek to reduce personnel-related paperwork and streamline personnel processes. Physical Resources Departments should respond to user complaints of long lag times and unreasonable costs through improved services. The universities must establish goals, objectives, and priorities to improve procurement processes and communications with key customer groups and vendors.

We surveyed faculty, staff and students and asked them to rate the quality and importance of selected academic and nonacademic business operations at the Arizona universities. They rated the overall quality between fair and good, and felt that quality was improving slightly. Faculty and students at all three universities agreed that the single most important supporting unit is the library.

We recommend that the Board evaluate and implement, as appropriate, the individual recommendations contained in the audit. We also recommend that the universities initiate another small step, the implementation of Venture Teams. We believe they offer a structure for ongoing employee input into the improvement of administrative support systems.

In the late 1970's the Arizona Department of Transportation pioneered the use of Venture Teams in Arizona state government for the purpose of improving productivity. Equal numbers of agency officials and volunteer citizens with extensive business experience make up the teams. Their task is to review internal agency productivity studies developed through positive input from "in the trenches" agency employees. The team approves and the agency head then adopts productivity enhancement plans. The Team's report supports a budget request in those cases where only additional resources can enhance productivity. This process has resulted in an enviable record of taxpayer savings during the past decade and has raised the Arizona Department of Transportation's credibility with the Legislature and the public. ▬ We have learned from interviews with university employees that they want to assist their institutions in finding ways to provide more efficient and effective administrative services. It is time to experiment with the Venture Team concept or alternative programs that would expose the universities to business management techniques of private industry. Coupled with the improvement of productivity incentive programs, the adoption of such programs will provide the Board and the universities with a means to demonstrate that more efficient and responsive administrative services comprise an essential part of their accountability to all constituencies.

RECOMMENDATION EIGHTEEN ▬ The Board should 1) proceed with a structural reorganization that more clearly defines and emphasizes the Board's policy-making role; 2) develop a management information system appropriate to its decision-making processes; 3) strengthen its strategic planning process and, through this process, develop additional measures of performance to improve accountability; and 4) strengthen the roles of the university presidents and Executive Director of the Board.

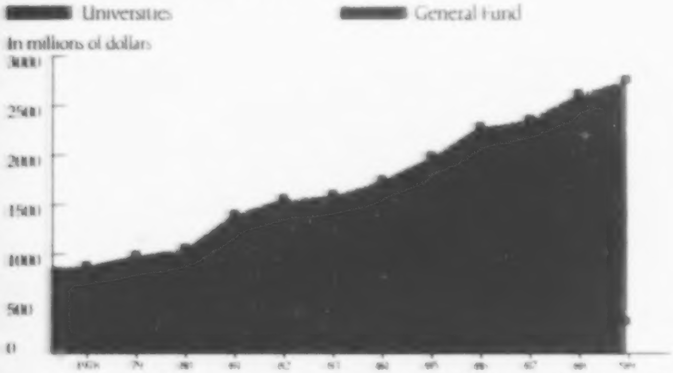
RECOMMENDATION NINETEEN ▬ The Board and the universities should evaluate the recommendations presented in the Coopers & Lybrand review of the management information, personnel, procurement, and physical plant services of the universities and the Board. The Board and the universities should implement those recommendations found to be appropriate to reach greater operational efficiencies.

RECOMMENDATION TWENTY ▬ The universities should implement Venture Teams or similar programs utilizing external expertise in the delivery of more efficient administrative services at the lowest possible cost. The universities also should implement additional employee productivity incentive programs.

FUNDING AND RESOURCE UTILIZATION ▬ Do the process of funding and the management of human and other resources adequately reflect state priorities and university missions and encourage their development? We conclude that generally they do, but we believe that the universities need to take some steps that will permit them to better capitalize on targets of opportunity. ▬ By anyone's standards, the funding and human resource commitments for Arizona's universities have become a substantial state investment. Over a span of 25 years, 1963 to 1988, the NAU, ASU main campus and UA main campus state operating budgets have grown from $29.2 million to $482.4 million, an average yearly increase of 11.9 percent. Inflation, as measured by the Higher Education Price Index, has experienced a yearly increase of 6.2 percent. Yet, when adjusted for inflation and enrollment growth, the university state operating budgets (per full time equivalent student) have grown at a yearly average of only 1.5 percent. Due to the competition for state funds, the percentage share of general fund appropriations to the universities has been declining (Figure 6). In recent years very few appropriated funds have been made available for capital improvements. The capital expansion at the main campuses has been funded with revenue bonds. Debt service is covered primarily from tuition and fees. Although some general funds were appropriated to begin construction at ASU West, most of the construction is being funded through a lease-purchase program (Figure 7). ■ In keeping with the Arizona constitutional requirement to provide a university education as affordable as possible, the Arizona universities' fee charges to resident students are relatively modest as compared with many public universities in neighboring states. Nonresident student tuition is more competitive (Figure 8). As the cost of a university education increases, the Board should provide for comparable increases in tuition and fees. However, the Legislature should provide appropriate incentives to the Board to increase student tuition and fees by permitting a reasonable portion of the increases to be utilized for improving the quality of education. ■ Registration and tuition receipts supporting the state operating budgets have grown from $6.2 million to $91.4 million. Charges per semester for full-time resident students have risen from $104 to $598 and nonresident charges from $269 to $2,314 ($2,043 at NAU). Last year's student scholarship and tuition and fee

FIGURE 6: APPROPRIATIONS TO THE UNIVERSITIES

Declining Share of the General Fund

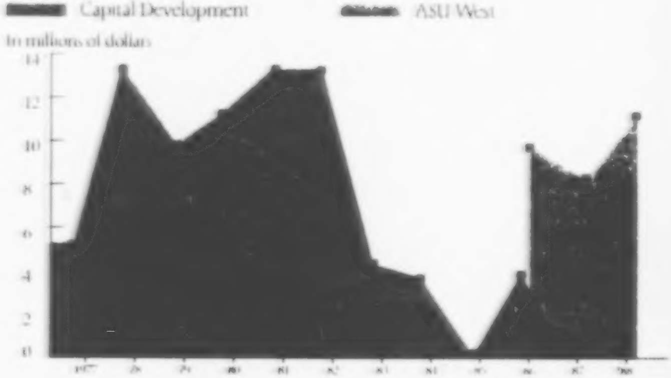


*EBO Recommendations

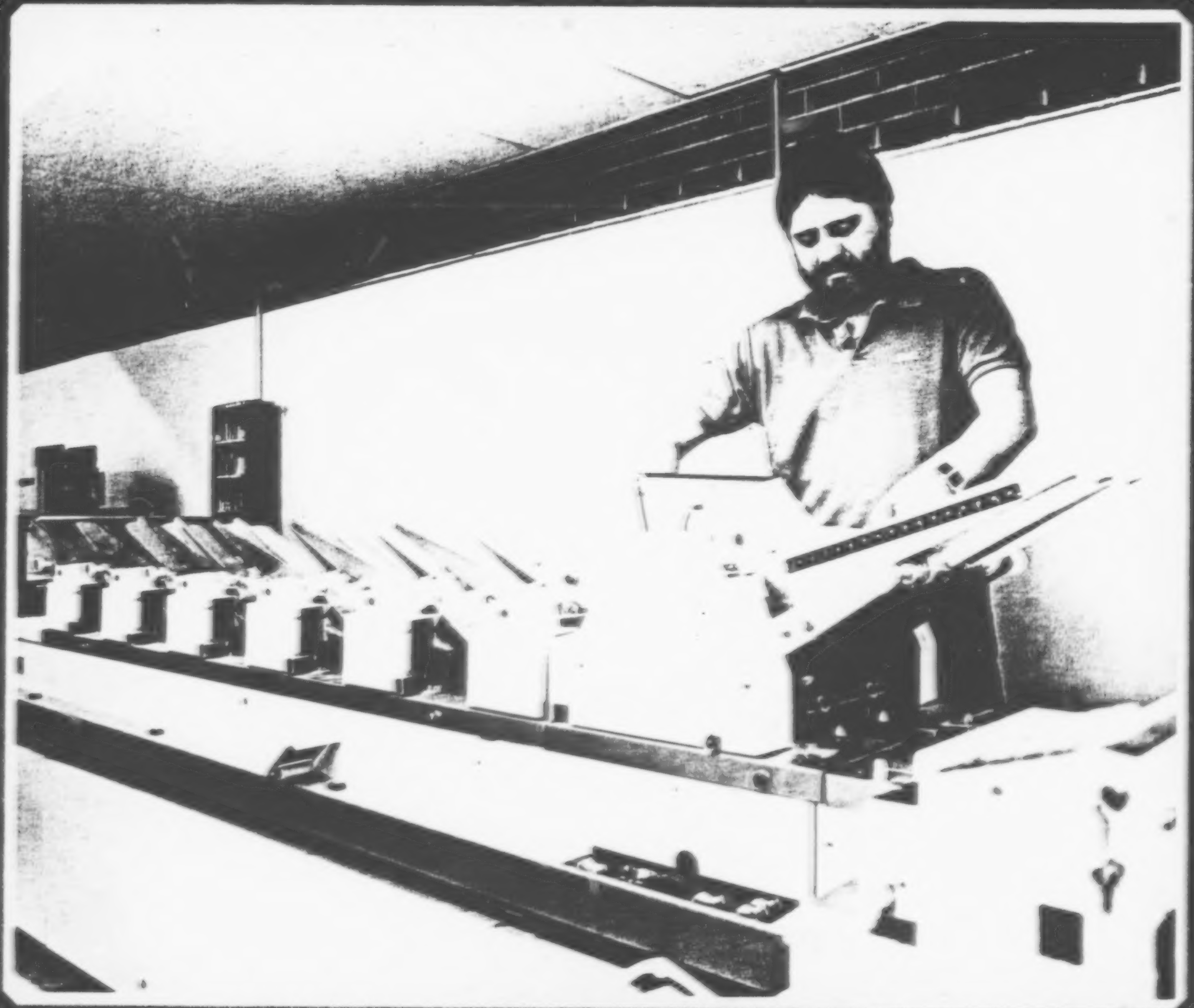
SOURCE: Arizona Board of Regents

FIGURE 7: GENERAL FUND APPROPRIATIONS

Land, Buildings & Improvements



SOURCE: Arizona Board of Regents



84

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waivers totaled $21 million. Headcount and full-time equivalent enrollments have increased from 32,000 to 87,000 and from 28,000 to 69,000, respectively. Degree conferrals have spiraled from 4,364 in 1963 to 13,870 in 1987, totaling 282,477 during this 25-year period. ■ The universities employ large numbers of faculty and staff to meet these escalating demands. Their state operating budgets currently fund 4,257 faculty, 690 graduate teaching assistants, and 6,023 administrative and support staff positions. A large number of additional positions are funded through other sources. ■ We conclude that the funding process for our universities provides ample opportunities at all levels for review, analysis, issue development and rational decision-making. We cite the universities' eighteen-month budget request cycles, and their detailed continuation budget and decision package requests, which contain many workload and performance measures and outputs, as evidence for that conclusion. ■ The Legislature has provided the universities with almost unlimited flexibility in the use of their financial resources. They can effect temporary and permanent changes, with Board approval, through the reallocation of funds within their base state operating budgets. This flexibility, which does not extend to decision packages newly funded by the Legislature, enables university administrators to react efficiently and effectively to targets of opportunity. Unfortunately, we have learned first-hand of the need for flexibility demanded by midyear budget cutbacks during four of the past seven fiscal years. The Legislature must revise the state budgeting system to eliminate these destructive situations, or the Board and the universities will not accomplish the tasks ahead, even with unlimited flexibility. ■ The executive and legislative budget staff documents do not adequately inform legislators about university budget requests and performance outputs, the basis for the staff recommendations, and other pertinent budget issues. If the legislative appropriations committees were to devote additional time reviewing university budgets, we believe a greater understanding of and appreciation for the needs of the universities would result. ■ Finally, we have come to three conclusions regarding the funding of the universities: First, as noted earlier, the university state operating budgets have grown at a yearly average rate of only 1.5 percent. This rate of funding, as noted by the Coopers & Lybrand study, has not produced "fat" in university budgets. If funding continues at the same rate in the future, Arizona's universities will not develop the "margin of excellence" they require to compete with the best public universities in the nation and to serve the expanding needs of a dynamic state. ■ Second, although the Board approves a priority funding order for each university's decision package

FIGURE 8: TUITION AND REQUIRED FEES at Western Regional Universities Main Campuses–Undergraduate Students–1987-88

University	Non-Resident	University	Residents
Wyoming	2,442	Wyoming	778
Idaho	3,042	Idaho	1,042
Montana	3,169	Nevada-Reno	1,080
Nevada-Reno	3,280	New Mexico	1,152
NAU	4,086	ASU/UA/NAU	1,196
Utah	4,146	Montana	1,351
New Mexico	4,374	Utah	1,437
Oregon	4,389	California-Berkeley	1,477
ASU/UA	4,628	Oregon	1,605
Washington	4,809	Washington	1,731
California-Berkeley	5,767	Colorado	1,846
Colorado	7,138		

SOURCE: Arizona Board of Regents

requests, it currently does not establish statewide funding priorities from among the three universities' decision package or capital funding requests. In order to assure the accomplishment of statewide goals articulated within Board and university strategic plans, the Board must establish a process to set statewide funding priorities for the universities' operating budget and capital outlay requests. ■ Third, the most significant trend in American higher education fund raising during the past decade has been the striking success of its public institutions in attracting private donations. The state cannot meet the rising costs of operating and maintaining an excellent system with its multiple missions through state appropriations and tuition revenues alone. The evidence presented in this report demonstrates that our universities are strong, but we believe they can become much stronger with additional support from the private sector. The state can encourage this support with appropriate incentives. ■ Hiring the best faculty and recruiting the best students are competitive challenges for many institutions already using large sums of money to supplement state resources. Nearly 60 percent of state legislatures, for example, now provide or soon will provide funds to match private gifts for endowed chairs at their state universities. While Arizona established such a program several years ago, the matching funds come from other state funding sources already targeted for the universities. The lack of net resource gains has effectively halted the program. Private dollars also permit our institutions to invest in specialized library resources, basic and applied research support, capital construction and special minority programs. ■ Arizona's universities have started relatively late compared to other major universities, but have had recent impressive capital campaign fund raising successes. The Legislature should continue this momentum by establishing partnership programs that will leverage additional private contributions. The funding for such programs should be provided in addition to, not in lieu of, current operating budget commitments or through other state sources such as lottery funds. ■ We directed our primary analyses of university human resources to listening to faculty and staff to learn their opinions on recruitment and retention. Faculty retirements will heavily hit the Arizona universities between now and 2005. An immense challenge will present itself in ten years, when it will become necessary to replace Arizona university faculty at a rate of at least 100 faculty per year. In addition, our universities run the risk of becoming attractive sources for other universities seeking to lure away our outstanding scholars as well as our promising young faculty. ■ The quality of life in Arizona works to the advantage of faculty recruitment and retention at each university. A strong economic forecast for the state, as compared with most other states, provides faculty candidates with some confidence as to the availability of resources needed to accomplish their programmatic goals. Reports of inadequate-to-uneven quality in the Arizona elementary and secondary school systems, and the recent pattern

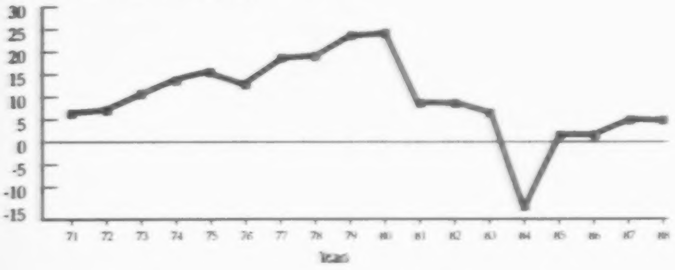
...our universities are strong, but we believe they can become much stronger with additional support from the private sector.

of midyear state budget reductions, however, currently hamper faculty recruitment efforts. ■ When viewed from a national perspective, the current levels of Arizona faculty salaries approach averages at universities with which our universities compete for talented people. This contrasts with the highly competitive position that existed a decade ago, when the quality of our faculties was significantly enhanced (Figure 9). Midyear budget cutbacks, resulting in inconsistent pay raises in the 1980's, have compounded the problem. In short, we have lost our competitive edge in hiring and retaining faculty. ■ Women and minority faculty consider university leadership fundamental to successful affirmative action recruitment and retention. Presidents set the tone and establish the philosophy and level of commitment. Academic Vice Presidents must make it happen operationally. ■ The ability to consistently hire and retain quality faculty in the requisite numbers depends upon availability of space, capital equipment and technical support staff. It appears that the availability of new university space falls behind the pace of programmatic changes. Delays and lags mark the management and remodeling of space. The present combination of state funding, grant support and foundation/gift support simply does not meet the capital equipment needs of our universities. ■ Faculty and department heads at all three universities strongly believe that too much paperwork and too many committee assignments detract from their first-order teaching and research responsibilities. Rules, regulations and forms developed by university administrators and off-campus officials should reflect a greater consciousness of the value of people's time. ■ University classified staff tell us that job security and benefits represent the most significant factors relating to retention, particularly tuition waivers for staff, their spouses and dependents. Members of the staff generally perceive that administrators do not appreciate the crucial roles they play, and that the merit award process plays an unclear role in salary decisions. They object strongly to the lack of clear policies regarding career paths and an increasing trend to hire off-campus applicants at entry-level salaries instead of promoting applicants from within the universities. The Board and the universities should address these staff concerns. Overall, the universities have highly dedicated and productive staffs that welcome opportunities to assist university officials in efforts to increase the efficiency of their operations.

FIGURE 9: AVERAGED ASSOCIATE PROFESSOR SALARIES at the Three Arizona Universities

In Comparison with National Averages 1971–1988

% Above or Below National Average



RECOMMENDATION TWENTY-ONE ■ The Board should develop accountability measures for the state funding it receives. It should adopt strategic plans to guide funding recommendations and provide the basis for evaluating system performance.

RECOMMENDATION TWENTY-TWO ▬ The Board and the universities should 1) perform a comprehensive, comparative analysis of total faculty compensation and develop goals to raise the national competitiveness of faculty compensation; 2) work with the leadership of state government to develop realistic plans to achieve these goals; and 3) improve environmental and working conditions to increase effectiveness and efficiency of faculty and staff.

RECOMMENDATION TWENTY-THREE ▬ The Legislature should establish an Eminent Scholars Trust Fund that would match private gifts with new state funds on a formula basis to create endowments for selected eminent scholars in priority areas of emphasis and fund necessary equipment and other support for them. The Legislature also should establish a separate Major Gifts Trust Fund that would match private gifts on a formula basis with new state funds for the enrichment of key university programs in areas such as professorships, library resources, scientific and technical equipment and scholarships.

IMPLEMENTATION OF TASK FORCE RECOMMENDATIONS ▬ A great deal of time and effort was expended in the development of working papers and the Task Force Report. An effective executive director was recruited and a dedicated and talented staff assembled to prepare the working papers and support the work of the Task Force. The very competent management consultant firm of Coopers & Lybrand was selected after a national competition. Some of the nation's foremost experts were engaged in the areas of minority recruitment and persistence and evaluating the quality of undergraduate education, utilizing funds made available by the Flinn Foundation, for which the Task Force expresses its gratitude. ▬ Some very scholarly working papers were written and the data gathering and analyses have provided some new and important insights into our universities. The Task Force met a total of 18 times with representatives of the universities including a considerable amount of time with the Board's Executive Director, Mrs. Molly Corbett Broad, and the university presidents, President Henry Koffler of the University of Arizona, President J. Russell Nelson of Arizona State University and President Eugene Hughes of Northern Arizona University. The Task Force has labored to develop a report that is worthy of the investment of its time and the state's resources. We believe that we have, but the validity of that belief must rest with the Board and the universities and the attitude with which they embrace the recommendations and the rigor they employ in evaluating and implementing them.

RECOMMENDATION TWENTY-FOUR ▬ The Board should establish a process to track the evaluation and implementation of the recommendations of this report and the working papers and should provide for public oversight of the process. Until the implementation is complete, the Board should issue annual reports to the state on the implementation plans, the steps taken and the results achieved.

Appendix A

TASK FORCE MEMBERS

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Kristin Cetone, University of Arizona
Judith Moody, Task Force Central Office
Sandy Sosnowski, Task Force Central Office
Carl Dent, Task Force Central Office

Appendix B

TASK FORCE WORKING PAPERS

ETHNIC MINORITY STUDENTS

Student Access to the Arizona University System with Studies of Retention and Persistence, Cotera, Augustus

Community College-University Articulation in Arizona, MacVicar, Robert

Opportunities for Telecommunication for University Outreach in Arizona, MacVicar, Robert

Barriers to Minority Access and Persistence in Arizona's Universities: Perceptions of Students, Faculty, Staff and Administrators, Wood, John

University Service to Rural Arizona, MacVicar, Robert

Survey of Factors of Student Access and Persistence in the Arizona Universities, Cotera, Augustus

Academic Preparation of High School Students in Arizona Mean National Curve Equivalent Scores (NCE) Stanford Achievement Tests 1986-1987, Cotera, Augustus

Minority Access and Persistence Study: A Working Bibliography with Annotations, Cowart, Vinette, Wood, John, and Cotera, Augustus

Progress Report: Access and Persistence of Minority Students in the Arizona Universities, Cotera, Augustus, Cowart, Vinette, Wood, John, and DeHalle, Normando

Student Financial Assistance in the Arizona Public Universities, Cowart, Vinette

Minority Education in Arizona's Universities, Wood, John

QUALITY OF UNDERGRADUATE EDUCATION

Evaluation and Assessment: A Summary Literature Review, Talbott, Mary and Church, Kathleen

Assessment and Outcomes Measurement: Statewide and Systemwide Initiatives, Talbott, Mary and Church, Kathleen

The Influence of Supply and Demand on the Professional Training of Teachers in Arizona, Sherberg, Esther

Executive Summaries of Reports and Books on Higher Education, Talbott, Mary

Undergraduate Literacy Programs at Arizona Universities, Church, Kathleen

An Evaluation of the Decennial Review Process, Barak, Robert

Undergraduate Assessment Efforts in Arizona's Universities: A Status Report to the Task Force on Excellence, Efficiency and Competitiveness, Ewell, Peter

Report on Honors Programs at the University of Arizona, Arizona State University and Northern Arizona University, Austin, C. Grey

Admission Requirements at Arizona Public Universities, Church, Kathleen

Role of Temporary Faculty in Undergraduate Education at the Three Arizona Universities, Davis, George

The Use of Temporary Faculty in the English and Mathematics Departments at the Three Arizona Universities, Talbott, Mary

Benefits and Costs of Assessment in Higher Education: A Framework for Policy Choice and Comparison, Ewell, Peter

A Survey of Alumni, Class of 1981, Arizona's Universities Outcomes and Opinions, Church, Kathleen

A Survey of Undergraduate Student Opinions, Church, Kathleen

Attraction and Retention of Classified Staff: The Silent Partners, Sherberg, Esther and Cetone, Kristin

Arizona: The State & Its Educational System, Hodgkinson, Harold

RESEARCH AND GRADUATE EDUCATION/ UNIVERSITIES – A STATE RESOURCE

University Research and Economic Development in Arizona Today: A Working Paper, Fisher, Marvin

The Status of Research Activity at Arizona's Universities: A Working Paper, Fisher, Marvin

Technology Transfer and Economic Development in Arizona, Brophy, James

How Should Universities Respond to the Imperative, "Professors Should Spend More Time Teaching and Less Time on Research!", Davis, George

The Quality of Graduate Education at Arizona's Universities, Fisher, Marvin

MISSION DEVELOPMENT AND STRATEGIC PLANNING

Arizona Environmental Scan Study, Bartram, Jack and Gebel, Melinda

Some Thoughts About Approaching the Future of Arizona, Caldwell, Roger

Foresight: Definition and Need for Arizona Universities, Caldwell, Roger

Arizona's Universities in Transition, Caldwell, Roger

Arizona's System of Higher Education in Comparison to Those of Other States, Davis, George

Future Changes: Implications for Arizona Universitites Part I: Summary and Recommendations, Part II: Background Studies, Caldwell, Roger

Strategic Planning and the Arizona Universities, Caldwell, Roger

Arizona Universities Program Changes Nine Year Summary: FY 1981 – FY 1989, Caldwell, Roger

Enrollment at Arizona Universities: Forecasts to 2000, Caldwell, Roger and Brown, Kenneth

MANAGEMENT EFFICIENCY AND ACCOUNTABILITY

The Governance and Decision Making Processes of the Arizona Board of Regents and Universities, Schneider, Jacqueline and Johnson, Edward

A Review of the Purpose and Scope Statements of the Task Force on Excellence, Efficiency and Competitiveness of the Arizona Board of Regents, Coopers & Lybrand

A Review of the Organization, Funding Process and Selected Administrative Systems of the Arizona Universities and the Arizona Board of Regents, Coopers & Lybrand

Survey of Administrative Service Operations at the University of Arizona, Arizona State University, and Northern Arizona University, Davis, George

Statutory and Regulatory Barriers to Greater Efficiencies in the Arizona University System, Johnson, Edward

Efficiency of Support Services within the Arizona Universities, Davis, George

Program Duplication in Arizona Universities, MacVicar, Robert

Advanced Placement: Increasing Efficiency in High School-University Articulation, MacVicar, Robert

Academic Degree Duplication, Council of Presidents.

FUNDING AND RESOURCE UTILIZATION

Board of Regents and University State Operating Budget Request Processes Including A 25 Year State Funding, Productivity and Performance Outputs History, Carroll, Alan

The Role of Private Fund Raising in Achieving Excellence in Arizona's Universities, Johnson, Edward

Recruitment and Retention of Faculty, "An Imperiled National Resource", Davis, George

Working papers may be obtained from:
ARIZONA BOARD OF REGENTS
3030 N. CENTRAL
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SUMMARY OF WORKING PAPER RECOMMENDATIONS

THE RECOMMENDATIONS ARE THOSE OF THE INDIVIDUAL AUTHORS AND HAVE NOT BEEN ENDORSED BY THE TASK FORCE, THE ARIZONA BOARD OF REGENTS OR THE ARIZONA UNIVERSITIES

ETHNIC MINORITY STUDENTS

- The Joint Conference Committee should continue to encourage the respective Boards to make the necessary investment of administrator and faculty time to continue to explore ways of achieving even better coordination at the level of the disciplines. (Text, page 76).

- The issue of recognizing the Associate in Arts and Science degree as evidence of equivalency in meeting the lower division general education requirements of the Arizona universities deserves the attention of the Board of Regents. The Board of Directors should encourage the community colleges to achieve a greater consensus in the over-all requirements for the general educational components of these degrees. (Text, page 76).

- The appropriate governing boards and state agencies should authorize the organization of the Arizona Telecommunications Cooperative as a means of facilitating planning for and delivery of an expanded opportunity for "distance learning" at the elementary, secondary and post-secondary levels. A structure for the Cooperative is proposed. (Text, page 89).

- The Cooperative should undertake studies to determine this prospective need for distance learning within Arizona and develop plans for providing those services that appear to be economically feasible. (Text, page 89).

- Using existing or soon to become available capability for telecommunications, devise a coordinated program of expanded offerings to rural Arizona. (Text, page 89).

- The cooperative should develop plans for a land-based microwave system that would provide linkage between the three public universities and the rural areas of the state. (Text, page 89).

- The cooperative should seek resources to conduct an experiment on the use of satellite telecommunication to provide a statewide service to schools and access to university courses and information services. (Text, page 89).

- The Board of Regents and the Board of Directors for Community Colleges should jointly address the issue of multiple use of telecommunication courses produced by their respective institutions and develop policies protecting the interests of the public, the sponsoring college or university, and the faculty. (Text, page 89)

- The Board of Regents, the Board of Trustees for Community Colleges and the Board of Education should create a joint commission to continue to examine the needs of the non-urban areas of the state for educational services. (Text, page 115).

- The Arizona Telecommunication Cooperative should continue to pursue means of expanding the outreach of the universities and the community colleges through joint planning and execution of programs serving both schools and individuals. The Arizona Department of Administration as the agency responsible for the state-wide telecommunications network should assist in the development of an education telecommunications network providing television and computer access among the elementary and secondary schools, the community colleges and universities. (Text, page 115).

- The state should develop a financial assistance program for resident students with financial need in which loan indebtedness is kept to a minimum. Programs which should be considered by the state include:

    1. A combination of state grant, institutional work-study, and small federal loan. This plan would focus grants and work aid during the freshman and sophomore years and limit the amount of loans needed to complete a baccalaureate degree to no more than $5,000.

    2. A scholarship loan program. This plan would offer state funded scholarships to prepare for career employment which become loans only if the recipient fails to meet the employment or service criteria of the program.

    3. A loan forgiveness program. The state would forgive or repay loans in exchange for service in an occupation which the state has determined as critical. (Text, page 383).

- Institutions should actively seek additional private funding for scholarships. (Text, page 383).

- The Arizona Board of Regents should continue its tuition/fee waiver program. (Text, page 383).

QUALITY OF UNDERGRADUATE EDUCATION

- Develop and maintain a statewide data system that can be used to forecast teacher supply and demand figures and can be the basis for long-term study on teacher attrition. This system should include race and ethnicity of the current and projected teaching force. (Text, page 521).

- Develop a program to recruit minorities into the teaching profession. The program should address: financial incentives (including forgivable loans); social and academic support; the effect of the basic skills testing requirement on minority enrollment. (Text, page 521).

- Develop pilot programs in the following areas:

  Beginning teacher induction;

  A multi-tiered certification system;

  K-12/community college/university partnerships;

  Teaching internships as fifth-year programs;

  University/College of Education partnerships;

  Delivery of education in remote areas;

  Using community college personnel to supervise practice teachers. (Text, page 521).

- Encourage research, data collection and dissemination, and program evaluation relative to teacher education. (Text, page 521).

- Develop standards that make the colleges of education accountable for the performances of their graduates. (Text, page 521).

- Recognize the programs and faculty of the Colleges of Education as important contributors to the university as a whole. (Text, page 521).

- Each university should develop improved procedures to assess placement in and/or the impact of developmental programs for students who do not possess the literacy skills to meet the rigors of freshman composition. This assessment is especially important for ASU and NAU. The community college experiment should be evaluated within the next two years and action taken to correct the situation if the desired results are not forthcoming. (Text, page 603).

- A comprehensive review of the resources devoted to literacy programs at the three universities should be undertaken and deficiencies should be removed in the near future. (Text, page 603).

- An inventory of all special programs designed to increase the basic skill level of educationally disadvantaged students should be undertaken and the programs evaluated. Demonstrably successful programs should be expanded and the resources for expansion should be made available and institutionalized. (Text, page 603).

- Incentives should be developed to encourage an increasing number of faculty to participate in coherent and intensive "writing across the curriculum" programs. (Text, page 603).

- The size of college composition classes should be reduced to the number recommended by the National Council of Teachers of English. (Text, page 603).

- Establish at all three universities A solid core staff of full-time lecturers or academic specialists with interest, training and experience in the teaching of writing to help oversee temporary faculty and GTAs. (Text, page 603).

- Find methods of funding literacy education that reflect its cross-disciplinary nature. (Text, page 603).

- A statement of the goals and objectives of the academic program review effort should be incorporated into Board of Regents policy so that the Board's expectations for this effort are clear. The statement should emphasize the value of program review to the institution and to the department conducting the review. (Text, page 613).

- Current decennial review processes required by the Board should include a more explicit outcomes component. (Text, page 619).

- Requests for additional funding through "decision packages" should be explicitly supported, where appropriate, by information drawn from the institution's assessment program. (Text, page 619).

- Included in the decennial review cycle should be a comprehensive review of undergraduate education--with particular emphasis on general education. (Text, page 619).

- Institutional Assessment Plans should clearly identify the means by which students are initially tested for basic skills (reading, writing and computation) at appropriate levels to engage in college level work. (Text, page 619).

- Finally, we concur with the findings of other observers that the "information function" at both the institutional and Board level needs attention. (Text, page 619).

- The universities should assess the impact of admission standards implemented in 1987 and 1988 on minority enrollment and student success. (Text, page 660).

- ASU and UA should gradually increase admission requirements for resident students to match those of non-resident students provided that it can be demonstrated that the new requirements will not impede access of qualified students from "lower scores" high schools. (Text, page 660).

- To increase the probability that the desired changes will be achieved by the new admission standards, the State Legislature and the Regents should examine mechanisms that will insure that the universities will not lose funding during years of enrollment declines. (Text, page 660).

- The universities' admission policies should be widely distributed to potential participants in higher education. A comprehensive plan for disseminating information about new admission requirements should be developed and implemented with generous lead time for students at appropriate grade levels. Students can then rationally choose the institution where the chance for success is optimized. (Text, page 660).

- Each university should examine the conditions of employment of temporary faculty in departments marked by heavy-enrollment service loads, paying special attention to recruitment practices, training and orientation, work load, compensation, benefits, departmental support, and performance. (Text, page 673).
- Policy guidelines should be developed that ensure that the conditions of employment of temporary faculty are consistent with institutional goals of delivering quality instruction to undergraduates. (Text, page 673).
- Modify institutional budgeting practices in such ways to permit most temporary faculty and graduate teaching assistants to be hired at least four months before the start of a given semester. (Text, page 673).
- Develop planning and recruiting practices that minimize the use of part-time temporary faculty, in favor of greater use of full-time temporary faculty and graduate teaching assistants. (Text, page 673).
- Gappa (1984, pp. 98-99) suggests eight areas for improvement in the employment of part-time faculty. In addition to these eight recommendations which are presented first, we have added three recommendations. (Text, page 680).
- "Appointment: Development of a qualified pool of applicants for part-time faculty positions. (Text, page 680).
- Contracts: Development of a contract for part-timers that articulates the institution's requirements while specifying and guaranteeing the part-timers' rights. (Text, page 680).
- Support Services and communication networks: Emphasis on integrating part- and full-time faculty and on giving part-time faculty a sense of dignity and belonging to the institution. (Text, page 680).
- Governance: Erring on the side of inclusion rather than exclusion in faculty governance and departmental deliberations, particularly with regard to curricular, courses, and teaching materials. (Text, page 680).
- Compensation and fringe benefits: Provision of an equitable compensation structure for part-time faculty, based upon their qualification, assignments, and performance; and provision of cost-of-living increases. Provision of fringe benefits for continuing part-time faculty. (Text, page 680).

- Job security: Thoughtful and deliberate treatment of the interests of part-time faculty in decisions about renewal, retrenchment, and dismissal. Appropriate degrees of job security for different types of part-time faculty. (Text, page 680).

- Orientation and development: Special programs to help part-time faculty become and remain effective instructors; access to regular faculty development funds or programs. (Text, page 680).

- Evaluation: Development of an evaluation system aimed at improving part-timers' teaching effectiveness that sets clearly articulated standards of performance as one basis for reappointment." (Text, page 680).

- Budgeting Process: Modify budgeting practices to permit temporary faculty to be hired at least four months before the start of a given semester. (Text, page 680).

- Facts and Information: Generate information about the employment practices, the impact on student learning, and the impact on the organization. Distribute the information to enhance the formulation of policy by the institution and improve the management practices at the department level. (Text, page 680).

- Full-time temporaries: In departments where a continuing need for full-time temporary teachers exists, more stable working and permanent relationships, including academic professional status, multi-year contracts, and/or tenure-eligible positions, should be considered by the department and the institution. (Text, page 680).

- The universities should periodically survey alumni including those who fail to complete a degree to determine if the current emphasis on quality undergraduate education is changing the perception alumni hold about the institutions. (Text, page 729).

- Develop enhanced methods of communication among administration, faculty and staff that will attempt to be responsive to the needs of the staff. A sense of community that acknowledges a shared mission is needed. (Text, page 780).

- Develop a career path for classified staff that allows them to prepare themselves for advancement and minimizes the problems that arise when an employee reaches the top pay scale in his/her classification. Develop policies regarding career paths that are clearly understood by supervisors and that assure that staff will have first opportunity to move forward when opportunities occur. (Text, page 780).

- Develop a staff representative body at NAU. (Text, page 780).

- Alter the format of the Staff Council at UA to include some elected representatives. (Text, page 780).

- Develop a means through which staff can provide suggestions about the delivery of administrative services, such as Venture Teams, and communicate widely the implementation of such suggestions. (Text, page 780).

- Develop a university-wide orientation program for staff that stresses their role in the mission of the university and defines the organizational framework as a partnership. (Text, page 780).
- Develop departmental orientation programs that stress the mission and organization of the department, the pattern of interaction among faculty, staff, students, and any segment of the community the department deals with. (Text, page 780).
- Include staff representation on more university committees. (Text, page 780).
- Make participation in education and training benefits more equitable campus-wide. (Text, page 780).
- Develop networking and communication among staff on all campuses and allow opportunities for collective problem-solving on each campus and between campuses. (Text, page 780).
- Devise creative ways to shift staff assignments during peak periods, but do not deny new hires when expansion dictates. (Text, page 780).
- Develop and encourage opportunities for service between staff and the community. Encourage staff always to serve as representatives of the university. For example, allow minority staff to have a role in the recruitment and retention of minority students. (Text, page 780).
- Provide more recognition activities for staff (e.g., a "Staff Day" at the union facilities with discounts to all staff); encourage departments to recognize staff and publicize the results appropriately. (Text, page 780).
- Discourage exploitation of staff. (Text, page 780).

RESEARCH AND GRADUATE EDUCATION/UNIVERSITIES - A STATE RESOURCE

- The Governor, the Legislature, the Board of Regents, the universities, and local economic development agencies need to develop more effective cooperation and coordination in an effort to attract new industry and encourage home-grown efforts. (Text, page 804).
- The Board of Regents should continue to encourage technology transfer through policies that lower or remove existing barriers. (Text, page 804).
- The state should institute a program of matching grants for research projects with potential economic benefit, requiring that every dollar of state funding be matched by two or three from federal or corporate sources. (Text, page 804).

- The state should also create a companion program to provide seed money to enable innovative, new businesses to attract venture capital from private sources. A small percentage of state pension funds or lottery receipts (or both) could finance this program. (Text, page 804).

- Both of the preceding programs should be housed in an agency separate from the Board of Regents or the universities to indicate that the purpose is economic development, not increased aid to higher education. (Text, page 804).

- Cities and the state should work together to support schools of conspicuously high quality and the social, cultural, physical, and aesthetic amenities that make Arizona a desirable place to live and work. (Text, page 804).

- The Board of Regents and the Executive and Legislative Branches of state government should increase support of basic and applied research, scholarship, and creative activity in the three universities as a sound investment in the future of the state. (Text, page 818).

- The Board of Regents, university administrators, and individual faculty should do a better job of articulating the role of university research in (1) the expansion and promotion of knowledge, (2) the education of students at the graduate and undergraduate level, (3) the recruitment and retention of creative and productive faculty, (4) the competition for external support, and (5) the stimulation of economic growth and competitiveness of Arizona and the nation. (Text, page 818).

- As part of the strategic planning process, the Regents and the universities should seek to develop the research function of each institution so as (1) to further the institutions' stated mission, (2) to build on demonstrable strengths, (3) to maximize the possibility of external funding, and (4) to provide for state and regional needs. (Text, page 818).

- The Regents should continue to encourage each institution to develop flexible polices of assignment and evaluation keyed to an individual's specific strengths rather than to a uniform pattern. In recognition of the stated role of teaching and research in each institution's mission, the criteria for evaluation and determination of merit should reward strong contributions to all facets of the institutional mission. (Text, page 818).

- Each institution should listen to what faculty cite as research disincentives and seek remedies insofar as possible. Among these disincentives: the library at NAU, the level of support for the arts and humanities in each institution, the shortage of lab space and the state of equipment at UA and ASU, the need for state-provided seed money and matching funds, bureaucratic procedures that require the expenditure of more time in preparation and evaluation of mini-grant applications than the amount warrants, and the glaring inequities in distribution of travel funds between units and between administration and faculty. (Text, page 818).

- Each institution should maintain the strong incentives: The high quality of the UA and ASU libraries, locally administered grants-in-aid available on a timely basis, and the admirably effective Distinguished Research Awards initiated at ASU and worthy of consideration elsewhere. (Text, page 818).

- The Regents should consider starting an eminent scholars' program to attract highly productive researchers in areas of strategic importance. (Text, page 818).

- Each university in its strategic planning should develop specific proposals for increasing non-state funding for research, building on present strengths, on areas of increasing research importance, and on the likelihood of high potential funding. (Text, page 818).

- The Arizona Board of Regents and the universities should streamline their procedures in order to be more responsive to faculty concerns and to develop greater faculty participationin technology transfer activities. (Text, page 844).

- Both universities should evaluate their participation in private incubator organizations. (Text, page 844).

- Arizona should consider instituting a matching grants program to increase the academic research effort in those disciplines important to economic development in the state. (Text, page 844).

- Arizona should consider creating a pre-venture capital fund to assist in the early stages of start-up company development and expansion. (Text, page 844).

- The Arizona Board of Regents should issue a formal statement on technology transfer which is less obtuse than the formal regulations. (Text, page 844).

- Periodic surveys of advanced degree recipients can convey important information to the Graduate Colleges. Surveys of those who do not complete degree programs might contribute contrasting information or suggest measures to increase retention and completion. (Text, page 859).

- A survey of doctoral graduates of all three universities indicated strong approval of the quality and relevance of graduate programs and of the procedures and requirements that support them. (Text, page 859

- They deemed the quality of direction and supervision very high but committee involvement significantly lower, suggesting that Ph.D. committees might function more efficiently with three rather than five members. (Text, page 859).

- Graduate College staff were generally perceived as helpful in all three institutions, but a lower rate of approval at UA would seem to justify some closer attention and improvement. (Text, page 859.)

- The financial hardships reported by advanced degree recipients warrant closer attention to maintaining the competitive level of stipends for teaching and research assistants and the desirability of waiving resident tuition fees to raise the stipends. (Text, page 859.)

- Each university has taken steps to increase minority representation in graduate programs. ASU has launched the most innovated and multi-faceted plan. Although it is too early to discern any results, the operation of the plan should be watched closely to see whether aspects of it might be adapted to the other universities. (Text, page 859.)

- Efforts to recruit superior graduate students should not slacken. They are attracted to research-active departments which can offer sufficiently competitive scholarships and assistantships. In these areas none of the Arizona universities is sufficiently competitive. (Text, page 859).

- Graduate program review and assessment are essential to building and maintaining quality. For best advantage the cycle of decennial reviews, accreditation reviews, and interim reviews should be planned to facilitate program development, progress, and improvement. Reviews should also be effectively utilized in institutional planning. (Text, page 859).

- Although the reward system at all three universities recognizes the positive value of a faculty member's contributions to graduate education, only ASU has made a concerted attempt to reward its most productive researchers and its most outstanding graduate mentors. These awards dignify an important area of educational activity and merit consideration by the other institutions. (Text, page 859).

MISSION DEVELOPMENT AND STRATEGIC PLANNING

- Foresight capability should be developed in the Arizona universities and the Regents' staff in support of both strategic planning and current decision processes. The role of the Regents' staff should be focused on the broad issues which are factual and useful to all the universities (e.g., demographic trends, national educational studies, and regional inquiries). The data and tentative conclusions should be shared fully by those participating in the process. (Text, page 899).

- Resist pressures to establish additional 4-year and above comprehensive public universities and, instead, concentrate the available limited resources in the three existing Arizona universities. If this is done while other states seek to find ways to cut back to less extended, more conservative postures, Arizona will capitalize on its competitive advantage. (Text, page 934).

- Recognizing that available budget resources will not permit the building of excellence in all academic programs, insist that the universities more effectively concentrate resources in select programs which, by virtue of inherent strategic advantages, can rise to prominence in ways consistent with university missions. (Text, page 934).

- Be constantly vigilant for ways to eliminate unnecessary, unwarranted duplication of academic programs or subprograms within or among the three Arizona universities. (Text, page 934).

- The Board should demand, but not necessarily specifically structure, a strategic planning process and provide for oversight of its subsequent activities; this is one of the most important functions of a governing board. (Text, page 1012).

- The Board should evaluate the most appropriate manner to review future strategic planning activities after the current strategic plan is developed. (Text, page 1012).

- The respective planning roles of the Board, the Board Staff, and the Presidents of the universities should be identified. (Text, page 1012).

- The planning process should be strategic in nature. (Text, page 1012).

- The universities should link planning to the budget process and program assessment and review while developing supporting management information systems. (Text, page 1012).

- The Board of Regents and the universities need to communicate their mission (system-wide and institution specific) and strategies to all constituents. (Text, page 1012).

- The universities should provide selected existing and relevant information to the Board for planning oversight purposes. (Text, page 1012).

- The universities should continue their development of improved decision support systems and the Board of Regents should develop and maintain a limited database for analyzing aggregate data developed by the universities. (Text, page 1012).

- The Board of Regents should specify a minimum content and format for the university fact books. (Text, page 1012).

- The Board of Regents should define what substantive questions they would like essential supporting information for (including the form and basic content) and request board staff to identify what types of information would satisfy the request, thus allowing the regents' staff and university staffs to determine the types of data to collect. (Text, page 1012).

- The Board of Regents should require a memorandum of understanding concerning data definitions between the regents' staff and the universities. (Text, page 1012).
- The Board of Regents should provide realistic and clearly stated guidelines to the universities for program change submissions. (Text, page 1012).
- The Board of Regents should identify statewide goals and recommend the degree to which the universities should respond to those goals or strategic directions. (Text, page 1012).
- The universities should be more efficient in processing program change requests. (Text, page 1012).
- The Board should consider revising slightly the program change (new activities) portion of the budget process. (Text, page 1012).
- The Arizona Board of Regents should alter the form of its report on student enrollment so that various types of enrollments are clearly identified. (Text, page 1082).
- Each university should develop a set of at least three enrollment projections that take into consideration anticipated environmental conditions over the planning period and the university's board approved role, scope, and mission. (Text, page 1082).
- New educational delivery systems should be investigated to slow the demand for on-campus enrollment growth. (Text, page 1082).

MANAGEMENT EFFICIENCY AND ACCOUNTABILITY

- It is specifically recommended that this same survey of administrative operations be implemented at three year intervals in order to track changes in quality through time. These initial survey results would then provide a benchmark to help evaluate the impact of administrative decisions related to distribution of resources, organizational changes, leadership changes, and the like. Data from assessments gathered at three-year intervals could be used to map trends, such as changes in perception of quality and importance of each administrative service operation. (Text, page 1275).
- The universities should seek to reduce personnel-related paperwork and streamline personnel processes. (Text, page 1302).
- Physical Resources Departments should respond to user complaints of long lag times and unreasonable costs through improved services. (Text, page 1302).
- Ways should be found to demonstrate and assure that Physical Resources costs are competitive with the private sector. (Text, page 1302).

- The Arizona universities should develop systems and functions to improve the procurement process. Goals, objectives, and priorities should be established based in part on communication with key customer groups and vendors. (Text, page 1302).

- The Arizona Board of Regents should include references to achieving college credit and/or recognition of proficiency in materials prepared by them for high school students considering attending one of the universities of the system. (Text, page 1323).

- The three universities should seek to expand the use of the opportunities offered by advanced standing classes in secondary schools and examinations offered by the universities to establish course credit or proficiency. In publications aimed at prospective students, appropriate references should be made to the recognition of advanced standing or honors sections of high school courses in determining eligibility for admissions as freshmen. (Text, page 1323).

FUNDING AND RESOURCE UTILIZATION

- The ABOR should establish a decision package request priority order for the three university system. (Text, page 1332).

- To obtain more information and accountability from the Arizona universities, legislators should require the JLBC staff to identify budget issues, and provide descriptions of university requests and staff recommendations in the annual JLBC staff budget document. The appropriations subcommittees should spend more than one to two hours per session on each university's budget request if the members desire to learn more about university budgets. (Text, page 1332).

- The Arizona Legislature Should:

  hold the universities harmless for all future tuition and fee increases by allowing them to retain the additional revenue in their local budgets for debt service, and some new and expanded programs, or;

  permit the universities to retain all their registration fee and tuition revenue for the same purposes, while making offsetting reductions in the state operating budgets, most likely from the Student Services and/or Institutional Support programs.

  Either of the above actions would:

  place the incentive for increasing tuition and fees where it belongs, with ABOR and the universities, while reducing the pressure on the legislature for university general fund appropriations.

  provide the universities with more flexibility to manage budget reductions during years of state general fund revenue shortfalls. (Text, page 1332).

- The universities' strategic plans should consider the growing trend for part time, rather than full time, student enrollments. (Text, page 1332).

- The Arizona Legislature should establish an Eminent Scholars Trust Fund that would match private gifts with new state funds on a formula basis to create endowments for selected eminent scholars in priority areas of emphasis and fund necessary equipment and support for them. (Text, page 1360).

- The Arizona Legislature should also establish a Major Gifts Trust Fund that would match private gifts on a formula basis with new state funds for the enrichment of key university programs in areas such as professorships, library resources, scientific and technical equipment and scholarships. The Board should seek assurances from the Legislature that appropriations for these two Trust Funds would not come at the expense of current and increased appropriations for other university programs. Alternatively, the Board should seek funding for the Trust Funds from alternative sources, such as lottery funds. (Text, page 1360).

- Members of the Board of Regents should take a more active role, when requested and where appropriate, in fund raising solicitations on behalf of the universities. (Text, page 1360).

- The universities should continue to increase the size of their development staffs and increases should be funded through state appropriations whenever possible. (Text, page 1360).

- To maintain our strengths and reduce those factors that interfere with successful recruitment and retention, we recommend the following:

  1. Universities and the Board should seek ways to increase the level of technical staff and capital equipment support.

  2. Universities should review classroom/laboratory remodeling procedures and practices, and modify the approach in ways that will be faster and cheaper without undercutting quality.

  3. Universities and the Board should seek ways to accelerate the schedule of new building construction.

  4. Universities, the Board, and Board Staff should engage in a war on paperwork and committee proliferation, at all levels, through elevated consciousness of the value of people's time.

  5. The Board and the leadership of the state government should agree on goals with respect to the competitiveness of faculty salaries and seek to attain them.

  6. Universities should bring more commitment to bear on the recruitment/ retention of women and minority faculty. (Text, page 1386).

ETHNIC MINORITY STUDENTS

STUDENT ACCESS TO THE ARIZONA UNIVERSITY SYSTEM WITH STUDIES OF RETENTION & PERSISTENCE: A RESEARCH GUIDE

AUGUSTUS S. COTERA

In responding to the question of whether Arizona is providing university access to all students, who can appropriately benefit from a university experience, the areas of necessary investigation are basically four, but with the addition of a critical review of the future availability of higher education for the two dominant minority cultures.

ACADEMIC PREPARATION

Pre-college preparation of the student is obviously a fundamental factor for academic success. The quality of pre-secondary and secondary school learning experience needs to be examined from several aspects including ethnic distribution, urban versus rural environment, academic programming and advisement.

PERSISTENCE

Once a student makes the decision to seek post secondary education and matriculates in either the community college or in the university system, academic persistence and progress to graduation must be reviewed and evaluated in terms of learning assistance, financial aid, and general student support services.

MINORITY STATUS

Although Hispanic students dominate the minority student population, the number of Native American students in many urban and rural schools is comparable or exceeds that of Hispanic students. Obviously on the reservations, Native Americans comprise the overwhelming majority. Black students constitute a tertiary component and are a comparative minority to the other two groups, except in certain districts within the urban areas. Thus, an analysis of the distribution of minority students needs to be made on a district by district basis and within some districts, school by school. A fourth minority needs mention, namely the Asian/Pacific Islander. Because Pacific Islanders are a comparatively minor group and because the academic success of Asian students generally exceeds that of the white majority, an in-depth study of this group is

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not recommended.

HISPANIC STUDENTS

Hispanic students comprise the most significant majority since demographic projections indicate that the student population will at least double within the next two decades. Concurrently, however, the drop-out rate of Hispanic students at the secondary level is about 28%. Extensive study is needed to ascertain reasons for this high drop-out rate of students both at the secondary and college level. In addition, the influence of environmental factors such as parental and family support, language and cultural barriers, and peer group pressures need to be examined.

NATIVE AMERICAN STUDENTS

Both off and on the reservations, Native American students are the most deprived minority group, educationally, and have the least opportunity for attaining higher education of any of the minority groups. As in the Hispanic group, low language proficiency is a formidable barrier to academic success. Standardized achievement test scores for reservation schools are consistently the lowest in the State. Detailed analysis of the factors contributing to this condition need to be made with definitive recommendations for improvement presented.

BLACK STUDENTS

Although Black students are the smallest of the three minority groups, in urban districts and schools they may comprise a significant portion of the student population. Whether significant studies of access and persistence of black students in Arizona have been made is not certain, but a comprehensive review should be made together with the studies of the dominant minorities.

SOCIAL

Secondary to academic preparation but perhaps of greater importance in academic achievement are factors critical to effective functioning within the majority culture. Although some of these factors are simple and self-evident, others are complex and difficult to define. Student support needs are varied but may be considered in two major divisions as indicated below.

ECONOMIC

In addition to the availability of financial aid, understanding of the process of obtaining financial assistance is not always obvious. The ability of parents to provide supplementary support and the potential absence of economic assistance to the low-income family by the student while attending college are possible factors limiting access and affecting persistence. The parameter of economic affordability for the minority student as well as displacement costs for the rural student need to be assessed as contributing factors.

CULTURAL

The influence of deep-seated mores and sociological patterns of life that characterize minority cultures constitute perhaps the most significant reason for both the lack of access and persistence among minority students and probably the non-minority rural students as well.

FAMILIAL/PEER INFLUENCE

In many instances, the pressures of home environments and peer groups is overwhelming to the extent that without adequate and timely secondary school and campus support services, the student never attains even the hopeful expectation stage in the formulation of educational goals. Very little research has been published about the extent of parental influence on the decision-making aspect of a student's life. In Hispanic and Native American families, a student's parents or some older family member will often exert great influence during the early stages of adult hood. For this reason, it is very desirable that documentation be obtained to support or refute this widely held view.

UNIVERSITY COMMUNITY INFLUENCE

The need to ascertain the nature and extent of the factors in the university community which either positively or negatively influence a student to succeed academically in the new "home" setting needs to be studied. The determination of the support services necessary to reinforce or counteract these factors could be the most important contributor to the academic performance and ultimate educational attainment of the minority student.

DEMOGRAPHIC

URBAN

The student who grows up within the urban environment is exposed to a variety of life experiences virtually unknown to the rural student. Some aspects of this environment are obviously very positive while others are profoundly negative. The extent to which high population density, either in schools or in general living conditions is an influential parameter in a student's decision to attend college and later to successfully complete a degree program has not been explored in-depth, especially in comparison to the rural student. In order to develop programs designed to address factors resulting from population environments, survey data must be collected, analyzed and recommendations made.

RURAL

A group of students, generally not considered as constituting a minority, are rural students who in comparison to students in the large metropolitan areas often do not have the educational advantages which an urban setting affords. An assessment of educational opportunities available to the rural student in comparison to those of the urban student will be made.

THE FUTURE

Finally, forecasting studies need to be made if any credence is to be given to demographic projections of population trends in Arizona. All available data indicates a doubling or tripling of the Hispanic population within the next two to three decades. Certainly within the next ten years, the numbers of Hispanic students in the high schools of the State will likely double. With the current scholastic attainment and the high drop-out rate, the number of these students who will not be able to meet entrance requirements will constitute a highly significant percentage of the total Hispanic student population. Similarly, the same condition exists for the Native American student population. Although the number of Native American students is not as large as that of Hispanic students, the academic performance of this group is even lower. Unless extensive studies are made now and corrective action is taken, the economic and socio-political effect of this segment of society on the future of Arizona could be disastrous.

In order to accomplish the above tasks, a number of methodologies will be employed as a means of obtaining reliable data, analyzing the data using various statistics, presenting results graphically, and finally making written recommendations.

The following methodologies will be used:

A. Selected groups of both professional and lay people will meet with appropriate members of the Task Force staff in order to obtain information, comments and suggestions which impinge directly on the concern being addressed.

B. The literature will be searched in order to obviate redundancy and unnecessary effort.

C. All data collected will be subjected to statistical analysis utilizing existing computer programs at the appropriate Arizona university. Similarly, university facilities will be utilized to prepare graphic presentations.

D. Once a body of information is assembled, consultation will be sought with professional personnel, both teaching and staff, as well as nationally known experts in the field for the purpose of evaluating potential conclusions and developing recommendations.

E. Throughout the above steps, appropriate staff colleagues will be consulted to critically evaluate process, procedures, and results.

COMMUNITY COLLEGE-UNIVERSITY ARTICULATION IN ARIZONA

ROBERT MACVICAR

INTRODUCTION

Among the western states, Arizona has one of the largest and most comprehensive systems of community colleges. Developed largely in the 1960's, these dispersed institutions have provided access into the higher education system to the rapidly growing populations in Maricopa and Pima counties and students in the more remote areas. At present only Apache, Coconino, Gila, Greenlee and Santa Cruz Counties are not within a community college district. Residents of these counties may enroll in any of the community colleges at tuition and fee rate subsidized by the Board of Supervisors. In addition, special arrangements exist between Pima Community College District and Santa Cruz County that permit students from that county to enroll as residents. Organized districts also serve adjacent areas without community colleges by establishing centers or offering individual courses on a demand basis.

In 1986-87, the community college system of Arizona served a total of 126,356 students, of which 24,739 were full-term and 101,617 were part-time. 1,959 academic and 2,251 occupational degrees were awarded. The Maricopa County Community College District is the third largest in enrollment among community college districts in the U.S., exceeded only by the Los Angeles and Chicago community colleges. It has been estimated that 30 percent of the high school graduates in Maricopa County enroll during the following year in one of the colleges of the district.

ENROLLMENT PATTERNS

Community colleges provide a significant pathway of entrance into the universities for the citizens of the state. In a recent year, students transferring from Maricopa colleges provided 28 percent of the undergraduate enrollment at Arizona State University. Of the present junior class at the university, 44 percent have attended one or more of the Maricopa Community Colleges. Data regarding the

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sources of undergraduate students at the state universities are presented in Table I.

TABLE I

Source of Arizona Resident Undergraduate Students at First Entry, 1986-87 Year.

	UofA	ASU	NAU
Arizona High Schools	2,178	2,080	1,240
Arizona Community Colleges	962	1,942	652
TOTAL	3,140	4,022	1,892

These data show that the community colleges are a major source of students at first entry. Added to this number are many students who leave the university of original entry, later enroll in a community college and then return to one of the universities (not necessarily to the one of original entry which distorts the above reported data to some degree).

In addition to students who withdraw or are suspended from the universities and later enroll in an Arizona community college, there are many who enroll concurrently in one of the metropolitan area colleges while attending either Arizona State University or the University of Arizona. Indeed, this procedure was so extensive in the past that special legislation was enacted to prevent misuse of the privilege.

The efficient operation of this complex of public community colleges and state universities requires the development of a coordinating mechanism that provides the student with information and guidance so that appropriate decisions can be made. The avoidance of "slippage" in the transfer process is rendered more significant by the number of students who transfer from the community colleges--3,556 in the 1986-87 year.

The Arizona community colleges who provide access to a significant number of high school graduates who enter post-secondary institutions. Data on the number of students who graduated from high school during the 1985-86 year and enrolled in an Arizona community college in the fall, 1986 is presented in Table II.

TABLE II

Arizona High School Graduates, 1986, Who Enrolled in Community Colleges, Fall, 1986, as a Percentage of Total First-Time Entering Students.

	1986 Graduates Enrolled	Students Enrolled	Total %
Cochise	237	1,985	11.94
Graham	301	1,542	19.52
Maricopa	4,930	23,867	20.66
Mohave	85*	N/A	N/A
Navajo	129	1,406	9.17
Pima	1,217	4,8612	5.03
Pinal	94	2,071	4.54
Yavapai	N/A	2,124	N/A
Yuma/La Paz	10	12,723	3.71

* Estimated number

The percentages of first-time entering students who are recent high school graduates varies widely among the rural community colleges, from 19.52 at Eastern Arizona College to 3.71 at Arizona Western College. More than twenty percent of first-time entering freshmen students are graduates of the preceding year for the colleges of the two urban community college districts. Likewise, students at the urban community colleges tend to be younger, with an average of 18.4 percent below 20 years of age in the colleges of the Maricopa District and 16.5 in the Pima District. The weighted average percentage of the rural districts is 14.9.

Somewhat different comparisons are presented in Table III which compares 1986 high school graduates with Fall, 1986 enrollments of Arizona high school graduates by county of origin and the related community college district. Again, wide divergence is apparent, with Eastern Arizona College enrolling more 1986 high school graduates than had been produced in Graham County the preceding spring. Pinal and Yuma/La Paz again are low. Eastern Arizona College has a vigorous outreach program serving Gila and Greenlee counties. Only 44.9 percent of the Fall, 1986 enrollment was from Graham County. No obvious explanation is available for the very low percentages for Pinal and Yuma-La Paz districts.

TABLE III

Relation of Total High School Graduates, 1986, by County of Origin to 1986 Arizona High School Graduates Enrolling in Contiguous Community College District, Fall, 1986.

County/CC District	1986 High Sch. Graduates	Comm.Coll. Enrollments of 1986 Arizona High Sch. Graduates	Percentages
Cochise	923	237	25.7
Graham	298	301	101.0
Maricopa	15,127	4,930	32.6
Mohave	602	85*	14.11
Navajo	899	129	14.3
Pima	4,695	1,217	25.9
Pinal	910	94	10.3
Yavapai	722	N/A	N/A
Yuma/La Paz	875	101	11.5

* Estimated

In addition to serving as entry sites for students seeking to pursue programs culminating in transfer to senior institutions and the baccalaureate degree, the community colleges are also the recipient of a significant "reverse transfer" from the universities. Information on the numbers of such students is not readily available, but the fact that in the Fall of 1986 there were more than 25,000 students who had previously attended another post-secondary institution suggests how substantial this practice is, amounting to more than 20 percent of the total enrollment. Given the high mobility of the Arizona urban population, many of the students in the Maricopa and Pima Community College districts had previously attended out-of-state institutions.

Community colleges and universities share responsibility for educational programming in several ways. Arizona State University uses community college instructors provided by South Mountain Community College, to teach pre-college level courses in writing and mathematics on the Tempe campus. A similar arrangement exists between Northern Arizona University and Yavapai Community College.

The universities and the community colleges share physical resources when off-campus offerings of the universities use the classrooms and other resources of a community college. During the formative years of ASU West, use has been made of the resources of Glendale Community College. ASU West, an upper division and graduate "branch campus" of Arizona State University, will depend almost exclusively on the transfer of students who complete their lower division requirements in one of the colleges of the Maricopa Community College system. Northern Arizona University has made extensive use of community college faculties for the outreach program of its Center for Excellence in Education.

In Tucson, Pima Community College provides programs at multiple sites leading to the A.A. degree. The University of Arizona has adopted policies which, with some exceptions, regard community college students pursuing the A.A. degree as having equivalent status to native students who enroll initially at the University and continue their enrollment.

COOPERATIVE COMMUNITY COLLEGE - UNIVERSITY PROGRAMS

Until restrictive legislation was passed (A.R.S. 15-1807), there was frequent joint enrollment by students at Arizona State University in the colleges in the Maricopa district and by students at the University of Arizona in the Pima college district. A somewhat related issue is the programmed joint enrollment by university students who require education below the collegiate level, a service frequently provided by both community colleges and universities. Arizona State University (in affiliation with the Maricopa district) and Northern Arizona University (in affiliation with the Yavapai district) now provide this kind of remediation by contract with the respective district to teach the courses on the physical facilities of the university. It is asserted, however, that many students prefer to take the needed courses from a community college while maintaining their primary affiliation with one of the universities.

Perhaps the most intimate relationship between the university and community college segments of post-secondary education in Arizona has developed between Northern Arizona University and Arizona Western College in Yuma. For several years, upper division and graduate courses, primarily in teacher education, have been offered by the university in cooperation with and using the physical resources of this community college. Recently the university and the college have agreed on a joint effort to create a limited upper-division program based on the first two years of study at Arizona Western College. An expanded curricula leading to degrees in general studies, business and teacher education will be offered. Under guidelines approved recently by the Regents, this would qualify as a Center and would receive funds for a resident faculty and administration, rental of space and provision of support for instructors and student services. A decision package was recommended, and this center became operational in the Fall, 1988.

A somewhat different proposal has recently been submitted by The University of Arizona for a center to provide expanded educational opportunity in Sierra Vista. The telecommunications capability currently existing between the campus in Tucson and Fort Huachuca, would be extended to the Sierra Vista campus of the Cochise College district, which would serve in much the same fashion as is anticipated for the NAU/Yuma Center. More of the instruction would be offered by means of television. This proposal has been formally approved by the Regents, and a non-priority decision package was recommended to the Executive Department and the legislative assembly for funding for fiscal year 1988-89. It was approved

ISSUES IN ARTICULATION

COURSE EQUIVALENCY

The Boards responsible for oversight of the University system and the Community College system have created a coordinating group, the Joint Conference Committee. This group, composed of three Board members and three Directors, meet twice each year to discuss issues and receive reports from ad hoc committees created to deal with specific problems, topics or issues.

Currently, one such committee is continuing to monitor the annual publication of a "Course Equivalency Guide." This document provides information to community college and university students on the transferability of community college courses and their "equivalency" by course number wherever appropriate, at each of the three universities. Courses not qualifying for specific course designation but eligible for application toward the baccalaureate degree are designated as "university elective" or "departmental elective." A significant effort has produced this useful guide. Community college students will find it easier to select those courses that will be appropriate for transfer and to avoid those which will be less likely to be fully recognized in the program the student plans to enter. Although not designed for use by university students, the Guide provides information useful for the student who seeks to acquire transfer credit from a specific community college for a particular university course needed for graduation. The usefulness of this document would be enhanced if appropriate information on the general education requirements of each Arizona University were included. Currently, only Arizona State University and Northern Arizona University have instituted general education requirements. The University of Arizona requires somewhat different general education course distribution among the nine academic units offering undergraduate degrees. The Course Equivalency Guide requires annual up-dating, and an on-line computer file of its contents would make current information available to students and advisors since changes would be made whenever approved by the institutional administration. Proposals for creating an interactive on-line system have been proposed to the Arizona legislature but not approved for funding.

COURSE CONTENT

A second group created by the Joint Conference Committee is composed of the chief academic officers of the universities and of a selected number of community colleges. This group has sought to deal with the more complex issues such as the uniformity of course content and common course numbers and name for the same general topic. There has been the beginning of sharing of course syllabi and evaluative instruments. Some 27 subject areas have been reviewed by the faculty concerned with the discipline and, as a result, significant progress has been made in adopting uniform nomenclature and standards for acceptable performance.

These relatively recent efforts have dealt with some of the less complex issues of articulation, primarily at the course level. These efforts must be continued, in part because of the continuing changes in the availability of courses at the community college level and curriculum revision at the universities.

DEGREE REQUIREMENTS

Another issue that may interfere with the most efficient transfer of students from the community colleges to the universities relates to different practices by the universities with respect to changes in requirements for degrees subsequent to a student's initiation of a program. There is widespread adoption by institutions of higher education of the principle that a student in continuous residence may choose to fulfill the requirements listed in the catalog in effect at the time of entrance or any subsequent catalog prior to graduation. This is true at the three Arizona universities for "native" students, i.e., students enrolling as first-time freshmen and continuing at the same university. Procedures differ, however, among the three institutions for those who enter as transfer students, who interrupt their collegiate programs, or who engage in "reverse transfer" and then return to the university which they had attended previously. The requirements are listed below for each of the three universities.

o **Arizona State University**

1. "Provided their college attendance has been continuous, students will be permitted to follow the degree requirements specified in the ASU catalog in effect at the time they were initially admitted to ASU or to an Arizona community college (though a student may elect to graduate under any subsequent catalog issued while the student is in continuous residence)."

In an interpretation of the above regulation printed in the 1987-88 General Catalog, it is stipulated that "reverse transfer" to an Arizona community college and subsequent return to ASU does not modify the above regulation as long as enrollment is continuous.

2."A student who has been readmitted after a period of non attendance, or after attending an institution other than ASU or an Arizona community college, will graduate under the curriculum, course requirements, and regulations for graduation as stated in the catalog at the time of readmission. While in continuous enrollment, a student may choose to graduate under any catalog issued subsequent to readmission."

o **Northern Arizona University:**

1. "Undergraduate students maintaining continuing student status must meet the degree requirements in effect at the time of their admission to the university or the requirements in effect at the time of their graduation, whichever the student elects." Two year college transfer students may follow the degree requirements in effect [at NAU] at the time they began their two year college work, provided their attendance has been continuous and normal progress has been made."

2. "Once a student looses continuing student status and must apply for readmission to attend the university, the student must meet the degree requirements in effect at the time of

readmission or the requirements in effect at the time of graduation."

3. Readmission. "Former NAU students who have not registered for two consecutive semesters (excluding summers) must complete a new application for admission...."

o **University of Arizona:**

1. "Choice of catalog under which students may be graduated--Candidates for bachelor's degrees may elect to fulfill degree requirements as outlined in any one catalog in effect during their dates of registration for university credit at the University of Arizona, with the following exception: Students who withdraw from the University for more than two consecutive semesters must meet degree requirements as outlined in the catalog in effect at the date of their re-enrollment for university credit or any subsequent catalog in effect during their dates of registration for university credit. Students admitted to the University directly from an Arizona community college may, provided not more than two consecutive semesters have elapsed since their attendance at the community college, elect to fulfill degree requirements as outlined in any one catalog in effect during their dates of attendance at the Arizona community college, or any subsequent catalog in effect during their dates of registration for university credit. This provision does not apply to the grade average requirements for graduation, which are governed solely by those in effect during the student's dates of attendance for university credit at the University of Arizona."

These excerpts show the universities recognize the important role played by the community colleges in providing collegiate transfer opportunities. All three universities give special recognition to transfer students from Arizona community colleges (ASU or UA), or all two-year colleges (NAU). ASU gives special consideration to the student who enters ASU and then enters or re-enters a community college. NAU requires students who interrupt their program for two semesters to meet the curriculum and course requirements in effect at re-entry. The UA permits a two-semester period to elapse without enrollment in that university or between termination of enrollment in an Arizona community college and entry to the UA without impact on the degree requirements that must be met. At ASU readmission is required if more than a one-semester interruption has occurred.

The issue of "reverse transfer" to an Arizona community college and its effect on graduation requirements on re-entry is less clear. As noted above, ASU treats this essentially as a continuation of ASU enrollment. At NAU it would appear that any interruption of more than one semester, regardless of continued enrollment in a community college would trigger a change of graduation requirement. At the University of Arizona, a two-semester interruption (which presumably would apply to a transfer to another institution of higher education as well as non-enrollment) would be acceptable for the student to continue to qualify under the requirements of the catalog in effect on original entry.

Thus, while the universities seek to

recognize the problems inherent in the articulation of their respective programs with the nine Arizona community college districts, they are not uniform in their practices. Because many community college students are uncertain about the senior collegiate institution they will ultimately attend and from which they will seek the baccalaureate degree, such divergence in practices may cause a student to spend unnecessary time in pursuit of a degree. Students in the non-urban areas of Arizona would presumably be less certain of their ultimate university of attendance. Students who must for financial reasons interrupt their program are also at greater risk of prolonging their attendance due to changes in requirements at the university.

GENERAL EDUCATION REQUIREMENTS

Another aspect of curricular coordination and articulation is that of variation among the Arizona universities in the general education requirements for the baccalaureate degree. As is true of other articulation issues, if the students know with considerable certainty not only which university they will seek to enter and, in the case of the University of Arizona, what academic program they will choose as their major, it is feasible to maximize the opportunities of the first two years in a community college. The leaders of the Arizona community colleges point to the well recognized fact that there is no general agreement about the competencies that qualify a person to meet the requirements of being "generally educated." Even less conformity exists about the particular kind of collegiate courses which will provide evidence for the attainment of these competencies. Since there is no single, agreed-upon pattern of general education, they agree that the universities should not require the student who seeks to transfer to match exactly the requirements on a course-by-course basis. It would be more efficient if the attainment of an A.A. or A.S. degree from a community college could be recognized by all the universities of Arizona as meeting the lower division general education requirements for the baccalaureate degree.

The problems inherent in such a proposal are, in part, the lack on the part of university faculty to recognize a distribution of courses not precisely matching the one they have approved. The three universities (as Table IV shows) vary in the lower division general education requirements. Indeed, at present, the University of Arizona has only a six-hour requirement in English Composition as a university-wide general education requirement; each of the schools and colleges of the University have their own pattern, giving a total of 11 different general education course patterns from which the beginning community college students would need to choose if maximum efficiency is to be achieved. To be sure, some of the variation is more apparent than real, but nonetheless it would be less confusing if a student could complete a degree at an Arizona community college without trying to match on a course-by-course basis for a particular university, only to find a need to change to another university or to a different program. Many community college leaders feel that such a policy would also encourage students to complete a full two years of collegiate work. Numerous studies have supported correlation between the length of time spent in a community college and later success in four-year institutions as transfer students.

If this proposal for "block transfer" is to win acceptance from the Arizona universities, reasonable uniformity in the general education requirement among the nine Arizona community colleges would seem a reasonable starting point. In the 1987-88 academic year catalogs, there were clearly significant differences in these requirements among the community colleges (Table V). Not only do the total hours required vary from 21 to 44, but minimum requirements for demonstrating mathematical competency vary from none in two colleges to basic college algebra in three of the remaining nine. Mathematics courses required vary among the other five.

The leadership of Arizona community colleges recognized the need for greater uniformity and moved during the past academic year to modify their respective institution's requirements as presented in Table VI. It is apparent that the degree of diversity has been significantly reduced with a range of 35 to 44 hours. Six of the nine will now require College Algebra as a minimum for the mathematics component of the general education requirement. The other three require intermediate algebra. Four of the nine require 41 or more hours.

General education requirements for the baccalaureate degree have undergone recent modification at both ASU and NAU. The University of Arizona does not have at present a university-wide general education requirement for the baccalaureate degree. The individual schools and colleges, with one exception, require forty or more credit hours of lower division courses. A general over-view of the requirements which are common to almost all of the programs in the three universities is as follows:

English	2 courses	(6 hours)
Mathematics	1 course	(3 hours)
Humanities	3 courses	(9 hours)
Social Science	3 courses	(9 hours)
Arts/Literature	2 courses	(6 hours)
Bio/Phys Sci.	2 courses	(8 hours)
Non-West..Civ	1 course	(3 hours)
TOTAL	14 courses	(44 hours)

For almost all programs, the minimum requirement in mathematics is college algebra. Several programs require either demonstrated competence in a foreign language or one or two years of course work.

It would appear, therefore, that a lower division general education requirement of not less than 41 hours distributed as follows would satisfy the requirements at each of the three universities:

English	2 courses(Engl. Comp.)	(6 hrs)
Mathematics	1 course (College Alg.)	(3 hrs)
Humanities	3 courses	(9 hrs)
Social Sci.	3 courses	(9 hrs)
Arts/Lit.	2 courses	(6 hrs)
Bio/Phys Sci.	2 courses	(8 hrs)
TOTAL	13 courses	(41 hrs)

TABLE IV

MINIMUM GENERAL EDUCATION REQUIREMENTS OF ARIZONA PUBLIC UNIVERSITIES

	WRITING/ COMMUNICATIONS	MATHEMATICS	SOCIAL & BEHAVIORAL	HUMANITIES
ARIZONA STATE	Eng 101, 102 (6) Literacy/ Critical Inquiry (6)	Math 115 (3) Stat or Comp (3)	2-3 courses (6-9)*	2-3 courses 2 (6-9) 2 courses in 1 Global and Historical
NORTHERN ARIZONA	Eng 101, 102 102 (6)	Math 110 (3) Math (3)*	3 courses	6 courses (18)*1
UNIVERSITY OF ARIZONA	Eng 101, 102 (6) Writing course (3)*	Math 117 (3)**	3 courses (9)***	4 courses (15)

Arizona State:

* Total of 15 hours combined. One course must be upper division.
** Students may combine this requirement w/other courses approved for G. S. credit.

Northern Arizona:

* Include 12 hours upper division from Discipline Studies Block or Focus.

University of Arizona:

* Students must pass writing exam as prerequisite; failure requires additional courses.
** With few exceptions, College Algebra or equivalent is required.
*** One course must focus ongender, class, race or ethnicity.

TABLE V

MINIMUM GENERAL EDUCATION REQUIREMENTS OF ARIZONA COMMUNITY COLLEGES 1987-88 ACADEMIC YEAR

COLLEGES	WRITING/ COMMUNICATIONS	MATHEMATICS	SOCIAL & BEHAVIORAL	HUMANITIES
ARIZONA WESTERN	100, 101 or 3 hours of Eng. above 101 (6)	Math 110 or above (3) (Int Algebra)	2 courses (6)	2 courses (6)
CENTRAL ARIZONA	Eng 101, 102, (6)	Math 102 (3) (Finite Math)	4 courses (12)	3 courses (6)
COCHISE	101, 102 (6)	Math 120 (3) (college Algebra)	3 courses (9)	2 courses (6)
EASTERN ARIZONA	Eng 101, (6)	Math 154 (3) (college Algebra)	3 courses (9)	3 courses (9)
MARICOPA	101, 102 (6) Comm (3) Reading (0-3)	Math 106 (math for General Ed(3) or Int. Algebra)	3 courses (9)	2-3 courses(6)
MOHAVE	101, 102 (6)	1 course (3)	3 courses (9)	2 courses (6)
NAVAJO	Eng 111, 112, (6) (Int Algebra)	Math 100 (3) 3 courses (9) or above	2 courses (6) Navajo/Indian Studies	3 courses (9)
NORTHLAND PIONEER	Eng 101,	Math 130 (3) (college Algebra)	4 courses (12)	3 courses (9)
PIMA	101, 102 (6)	(combine w/science)	3 courses (9)	2 courses (6)
YAVAPAI	101, 102 (6)	(combine w/science)	2 courses (6)	1 courses (3)

Note: Total hours required may exceed total of minimum by area

TABLE VI

MINIMUM GENERAL EDUCATION REQUIREMENTS
OF
ARIZONA COMMUNITY COLLEGES

1988-89 ACADEMIC YEAR

COLLEGES	WRITING/ COMMUNICATIONS	MATHEMATICS	SOCIAL & BEHAVIORAL	HUMANITIES
ARIZONA WESTERN	6	Intermediate Algebra 3	9	9
CENTRAL ARIZONA	6		12	9
COCHISE	6	College Algebra 3	9	8
EASTERN ARIZONA	6	College Algebra 3	9	9
MARICOPA	9	Intermediate Algebra 3	9	8
MOHAVE	6	College Algebra 3	9	9
NORTHLAND PIONEER	6	College Algebra 3	9	9
PIMA	6	College Algebra 3	9	9
YAVAPAI	6	College Algebra 3	9	15

Upper division requirements at NAU (12 hours) and ASU (3 hours) would, of course, remain as at present. The current study at the University of Arizona may produce more uniform pattern of course requirements at that institution.

SPECIAL ADMISSION REQUIREMENTS

Another, rapidly increasing issue of articulation relates to the restrictions being placed on entry into many areas of university study that have historically been open to all students who meet the requirement for entry into the university. Selective admission into undergraduate programs in Nursing, Architecture, and Pharmacy have been traditional. Increasingly, barriers are being erected to restrict entry into programs in Education, Engineering, and Business Administration. Special requirements applicable to transfer students are being restructured, i.e., entry into the program in Business and Public Administration requires enrollment at the University of Arizona for not less than 12 credits with a GPA of 2.50. Students who transfer to the university and have met all the requirements except the 12 credits may be granted "provisional permission to enroll in upper division BPA courses until they have met the minimum." Similar regulations apply to students who wish to transfer into the upper division of the College of Engineering and Mines on a provisional basis except that a minimum of 15 units is required and the GPA must meet the departmental requirement. One semester of pre-professional study at the University of Arizona is required for entry into the professional program of the College of Architecture if the student transfers from a community college. Somewhat similar requirements are in place at Arizona State University for entry into the upper division of the College of Business and the College of Engineering and Applied Sciences. Admission into the various undergraduate programs of the College of Architecture and Environmental Design is selective, but attendance at ASU is not required for upper division status.

A long-time source of irritation between universities with accredited programs in business administration and two year colleges is found in the restrictions imposed on the transfer of courses not regarded by the universities as acceptable for transfer despite significant commonality in content (with the exception of business law, which will meet the requirement but is accepted as a lower division course). This policy is mandated by the American Assembly of Collegiate Schools of Business as a requirement for accreditation and, to a substantial degree, falls outside the authority of the individual universities. Programs in business and accounting at two-year institutions contain significant content found in courses at the upper-division level in the universities. A problem arises if a student from the two-year college seeks to enter a university with an accredited program in business because a significant amount of coursework may be repetitive. For example, at Maricopa Community College, students completing the A.A.S. degree in Business Middle Management might take a total of seven or eight courses (21-24 units) that would need to be repeated at the upper-division level at the university, although these courses would qualify toward a maximum of 30 hours of lower division courses in economics and business. From a practical point of view, only a fraction of this 30-hour maximum would be included once the allowed transfer courses, including business law, are considered, probably nine hours or less. At the national level this issue is being debated before the committee appointed by the Department of Education to deal with accreditation issues.

ACHIEVEMENT STANDARDS

One aspect of community college-university relations for which no easy solution exists is that of differing standards of expectation and achievement. Given the relatively unselective admission standards of the community colleges and the tendency of better prepared students to select universities for entry as freshmen, there is usually a significant difference in the achievement of the two populations. Given the likelihood that teachers in each element will tend to "teach to the median" level of the student population, it is not unusual for teachers of upper division courses in Business and Engineering to assert that the transfer students are less well prepared in science and mathematics than the native students. The somewhat less rigorous environment of the two year college may also account for a decrease in grade point average that usually occurs in the first semester following transfer. Community college leaders point out, however, that their schools focus on areas such as reading and institute corrective action, if necessary, while the universities neglect to measure this critical skill.

The efforts university and community college faculty have to achieve "course equivalency" in nomenclature need to continue, with a focus on course content and achievement level deemed satisfactory for acceptable performance. Sharing of course syllabi, mid-term, and final examinations will make it more obvious what the expectations are of the performance level at time of transfer and will assist the students in the community college and the professors in both institutional types to be better prepared for the task of improved articulation.

CONCLUSIONS

Arizona college students in increasing numbers find themselves using the facilities of the community colleges and the three public universities. Much has been done to create a situation in which transfer from one segment of the public post-secondary educational system to another is enhanced. Students have increasingly been provided better information on what the universities expect of them at the completion of their community college studies. Faculty have been encouraged in disciplinary areas to consult with each other. Significant problems remain, however, and in view of the large numbers of transfer students in both directions, the potential for increased efficiency exists.

RECOMMENDATIONS

- The Joint Conference Committee should continue to encourage the respective Boards to make the necessary investment of administrator and faculty time to continue to explore ways of achieving even better coordination at the level of the disciplines.

- The issue of recognizing the Associate in Arts and Science degree as evidence of equivalency in meeting the lower division general education requirements of the Arizona universities deserves the attention of the Board of Regents. The Board of Directors should encourage the community colleges to achieve a greater consensus in the over-all requirements for the general educational components of these degrees.

OPPORTUNITIES FOR TELECOMMUNICATION FOR UNIVERSITY OUTREACH IN ARIZONA

ROBERT MACVICAR

INTRODUCTION

During all of recorded history, formal and informal teaching and learning have been conducted by teacher and student in close contact, through voice and demonstration heard and seen by the learner. The development of writing added a major dimension, making possible the recording of the "lecture" by the teacher in the form of a book and by the student in the form of lecture notes. This ancient process is still the dominant mode of instruction in school and college classrooms worldwide. Its very persistence through the centuries is indicative of its general acceptance and success.

There are, however, two severe limitations to the system. It requires that both the teacher and the student be present in the same place and at the same time. Only through the invention of communications systems such as the telephone, radio, and television, and such devices as teleconferencing bridges, microwave and fiber optic cable transmission components, satellites, computers, modems, and video-tape-recorders has the possibility of extended (over-distance) and expanded (over-time) learning become practical. Collectively, this extended learning process and its accompanying telecommunications technology is referred to as "telecommunications."

A significant portion of Arizona's population is remote from the campuses of the universities and, hence, could benefit from the availability of "distance learning" through the use of telecommunications, including video classes in real time. The urban population, moreover, often finds it impossible to take advantage of on-campus instruction because of employment and the resulting scheduling conflicts. This population can also be served by telecommunications through broadcasting video lectures at convenient times or by recording them for later replay.

The Telecommunications Division of the Arizona Department of Administration is creating a statewide network capable of serving the voice and data transmission needs of all the state agencies (including the state universities). The ultimate goal

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is to provide modern, high-quality capability to each county seat and major state installation. With appropriate design of this network, expansion to provide greater telecommunication capability to the three universities (and to the community colleges as well) at marginal additional cost is a very real possibility.

This working paper will explore the potential of telecommunications to serve the needs of Arizona for both place- and time-flexible learning. The capability of a statewide network to serve both instructional out-reach and data needs of an off-campus clientele will be presented.

Finally, the paper will describe a proposed structure for the planning and operation of a state-wide telecommunications network.

ARIZONA'S NEED FOR EXTENDED AND EXPANDED LEARNING AND INFORMATION SERVICES

Arizona is composed of two populations: one is located in two large metropolitan areas and comprises nearly 80 percent of the state's total and the remaining population is widely dispersed over the rest of the state. At present, the urban population is served by on-campus programs in Tempe, Phoenix, and Tucson. Both of the universities in the Phoenix and Tucson metropolitan areas offer upper division and graduate courses off-campus. Northern Arizona University offers off-campus classes in North Phoenix. The west campus of Arizona State University is currently serving 3,000 students (Spring Semester, 1988); it will complete the first phase of its permanent campus in Glendale within the next five years.

There are a number of independent and proprietary college level institutions in Phoenix. Grand Canyon College, located on West Indian School Road, serves an undergraduate population of 1,700. There are several proprietary institutions, all located in Phoenix, that provide baccalaureate and master's level programs. The American Graduate School of International Management offers a specialized master's degree, primarily to a full-time student body. In addition, there are a significant number of out-of-state public, independent and proprietary post-secondary institutions offering courses and special programs in the two metropolitan areas.

Each metropolitan area also has a community college "system" that offers lower division and non-credit programs in a wide range of specializations. These serve the full-time and part-time student and have extensive late-afternoon and evening offerings. While neither community college district has done an extensive survey of needs for the level of service they offer, both are highly responsive to the expressed needs of employees of the regions they serve. As will be described in detail in a later section, both have sought to increase the availability of their programs through the use of telecommunications. Maricopa Community College District has an ambitious plan to expand an already substantial capability to originate and broadcast courses via television.

No extensive needs assessment for collegiate level programs in the non-metropolitan areas of the state has been undertaken. Based on the experience of Northern Arizona University, which has attempted to serve the non-urban areas of the state, there appears to be a substantial unmet need in locations so small or so isolated that it has been impractical to serve them. For example, in a recent six month period, Northern Arizona University was forced to cancel 62 graduate classes and 25 undergraduate classes for which there was insufficient enrollment to justify the cost of providing on-site instruction. These were courses for which adequate demand had been forecast. On-campus pressures have also limited the offering of courses and programs for which there is demand: business administration, accounting, computer science, engineering and nursing. These are components of higher education most likely to benefit small business and industry outside the two major metropolitan areas.

Increasingly, professional licensure is dependent for its renewal on demonstrated involvement in continuing education. Other occupational clusters also need exposure to current trends in order to maintain the competence of their members. Interruption of the regular schedule of these persons to travel to seminars or similar events at a central location represent a significant personal and organizational cost.

Using conventional techniques, however, requires the creation of an audience of such size as to justify the cost of preparing for and delivering the program. As a result, few programs are available during times and at places easily accessible to rural area practitioners. Collectively, this is a very substantial audience that is currently underserved by current efforts of the universities. This is particularly the case for those persons in rural Arizona.

It is even more difficult to measure the potential demand for "information services." Increasingly, access to data banks and other information retrieval services is essential to successful practice in many professional and technical specialties. Advances in technology may be expected to impact not only current users of this class of services but an increasing segment of the work force. The currently available Arizona Resource Services in Tucson served a total of 3,170 requests in 1986-87. Demands for present materials also give some indication of demand. The Arizona Inter-Library Loan Center in Phoenix processed over 45,000 requests for inter-library loan requests in the past fiscal year.

In addition to the needs of the public for educational service, the availability of a quality network interconnecting the three universities, the community colleges and their respective governing board offices could be useful in many ways. The capacity to transmit data for various purposes, administrative and research, among the components of the post-secondary complex would be desirable. A super-computing capability should be available to each of the university campuses and linkage to a Arizona computer and to national supercomputing centers via existing networks will be essential in maintaining the quality of the scientific and engineering research programs.

The inter-institutional sharing of scarce resources, personnel or technical capability through telecommunications can enhance quality. The expense of travel, both in direct costs and the more significant cost of lost time, can be avoided by use of audio teleconferencing. When these conferees know each other reasonably well, meetings held by teleconferencing tend to be more productive than face-to-face contact. Faculty with unusual skills or unique specialties can be shared by more than one audience via telecommunication. The most desirable mode is two-way video, two-way audio, which with appropriate equipment and planning might serve multiple sites. Distinguished scholars visiting one campus can become accessible to one or more other campuses via a telecommunication linkage. The need to enhance quality while making more efficient use of personnel is difficult to quantify but it clearly exists.

Although this document focuses on Arizona's needs for the services provided by the postsecondary segment, the K - 12 component also has needs that can be met via telecommunications. All schools can enrich their offerings by special programming delivered via television. Small rural high schools that cannot afford to offer a full range of college preparatory courses may be able to do so via telecommunications.

Through the use of telecommunications, individuals place-bound by distance, demands of employment, incarceration, or handicap can be provided educational services not now available. Business and industrial organizations and their employees can be served with programming tailored to their needs, regardless of location. Educational and governmental entities can exchange data more efficiently than is currently the case. Better use can be made of the times and talents of faculty and administrators of the post-secondary institutions. Elementary and secondary schools can improve the quality and extent of their curricula. Research can be enhanced through greater accessibility to data bases and to super-computing capability. These needs, and others not yet clearly identified, can be efficiently and effectively served by a modern, flexible and expandable telecommunication network.

DEVELOPMENT OF A STATE-WIDE TELECOMMUNICATIONS NETWORK

Fragments of a statewide telecommunications network exist in Arizona, and a major expansion of the Department of Administration's voice and data network is in the late planning stages. If current plans are carried out, the major "backbone" of this network will be advertised for construction by late 1988. With appropriate planning, a comprehensive telecommunications system to serve the needs of all levels of education can be created at minimal cost. An inventory of currently available elements is presented below.

RADIO

Radio was the first of the telecommunications technologies to find broad use for "extended learning." As a media it is limited essentially to one-way audio and hence has not been used extensively except for "enrichment" of the curricula of the elementary and secondary schools. The University of Arizona and Northern Arizona University operate FM radio stations, both affiliated with National Public Radio. A limited amount of their on-the-air time during normal school hours is used to provide enrichment components. Rio Salado Community College also operates an FM station affiliated with National Public Radio.

TELECONFERENCE

This two-way audio technology can use the institution's own capabilities (as is the case at Northern Pioneer College in Navajo County) or leased-line or dial-up commercial telephone circuits. This technology has the advantage that the instructor and the students (who may be located at multiple sites) may communicate with each other. This technology also permits the scheduling of meetings without the necessity of travel. Several of the community colleges own their own "bridges" for making the necessary inter-connections to all the locations involved in the process and others are planning to acquire them. These linkages may also be used for student advisement and registration.

It is possible to augment the voice transmission by graphics transmitted over the same interconnection from a central source. Teachers may, by this means, enhance written material supplied by mail or other means of distribution. Teleconferencing can also supplement by group discussion the distance learning provided by video-cassettes or programmed learning techniques.

The availability of a statewide and state-operated telecommunications network for voice and data transmission will enhance the opportunities to make more effective use of teleconferencing. When supplemented with graphical presentations and, as will be discussed later, computer technology, this mode of instruction becomes highly effective. The state-wide network should plan for expansion of this type of usage, particularly during the periods of minimal usage by state agencies from 5:00 p.m. to 8:00 a.m. In the optimum situation, every resident of Arizona would be able to use a local telephone call to access a range of distance learning opportunities.

COMPUTERS

The personal computer is becoming increasingly a means for instruction and learning. When combined with telecommunication linkages via an appropriate network, many of the advantages of teleconferencing can be experienced without the necessity of simultaneous presence of teacher and learner. The "electronic bulletin board" becomes a device through which the teacher communicates timely information to the class. The students may, in turn, use "electronic mail" to communicate with the teacher and have the teacher respond. When appropriate, the response may be added to the "bulletin board" for all the students to read. As faculty and students become more familiar with this technology and more comfortable with the computer as a communications device, it may be expected that this type of "extended learning" will increase.

The necessity for a good telecommunications network is self-evident if full use is to be made of this technology.

TELEVISION

Of all of the modalities for distance learning, television provides the best resemblance to the traditional classroom. The teacher can be seen and heard, and demonstrations can be displayed (often in a far superior fashion than is possible in the traditional classroom). Moreover, responses can be elicited from the students if two-way audio is available. Two-way video also permits the teacher to observe student responses at the distant site.

VIDEO CASSETTE

Of all of the means of using video for distance learning, the use of video cassette is the most flexible and least costly. Many video cassette packages are available from commercial and non-profit sources. Locally produced packages may be as simple as recording an actual class with a fixed camera or a camera operated by the teacher. Whatever the source, the advantage to the student is time and place flexibility. The advantage to the college or university is relatively low cost if the number of users is substantial. A significant disadvantage is the delay in receiving feed-back to questions from the instructor, although time may be reduced through use of electronic mail. Also, video cassette courses may be supplemented by periodic visitation to the remote site by the instructor. Teleconferencing at scheduled times also permits the students to interact with the instructor and with each other.

OPEN-CIRCUIT TELEVISION

Open-circuit broadcasting of educational materials via VHF or UHF channels has been employed for many years. This may be supplemental material or entire courses. The instruction can be in real time or be a delayed broadcast of a pre-recorded class session. It can be supplemented by two way audio if the facilities are available.

The public broadcasting station located in Tucson, KUAT, broadcasts 30 programs per week for the Arizona Schools Services through Educational Technology (ASSET) and six nationally-produced video telecourses offered by Pima Community College for undergraduate credit. The public station in Tempe, KAET, broadcasts nine video-telecourses for Arizona State University credit and six for Rio Salado Community College of the Maricopa Community College District. KAET-TV also broadcasts in-school video programming to K-12 schools that receive its signal. Two of the station's early morning hours are reserved for broadcasting for videotaping and play-back later. Both of these stations have some time that could be used for broadcasting during the early morning hours when the stations are off the air. Programs could be received at the time of broadcast or recorded by the student for later viewing. One commercial station in Phoenix (KTVK, Channel 3) donates two hours of early morning time for broadcast of courses provided by the Maricopa Community College District.

INSTRUCTIONAL TELEVISION FIXED SERVICES (ITFS)

This mode of delivery involves the use of channels in the ultra-high frequency range reserved by the Federal Communication Commission for educational use. These require relatively low power transmitters for line-of-sight reception. Both the University of Arizona and Arizona State University use ITFS broadcasting to service business and industrial firms that contract for courses to be viewed on the company's site, after and during regular working hours.

The relatively short range of the broadcast signal of an ITFS station is a limitation, but its relatively low installation costs encourage its use. When combined with reverse audio capability, it is an attractive alternative for expansion of programming into relatively high density markets. Cooperation between the university segment and the community colleges will be essential if upper division and graduate courses are to be delivered outside the metropolitan areas by this means.

CABLE TELEVISION

Many areas of Arizona are served by cable and, when available, many households and other users are connected to the cable. As a public service, some cable companies provide channels which became available for transmitting signals provided by colleges and universities. A number of community colleges and the public universities provide instructional material to the cable head-end for transmission to those who can receive the signal. Unfortunately, the number of cable operators is so numerous that it is difficult to develop agreements with most of them. Some significant fraction of the rural public, moreover, is located outside the area served by cable. Despite these limitations, the availability of Instructional Television Fixed Services channels in several locations makes it possible for each cable company to receive the signal and include it in its offering on the cable.

SATELLITE COMMUNICATION

In some respects, communication by a satellite transponder is superior to the conventional broadcast range of a VHF, UHF or ITFS station. This signal can originate at any "up-link" site and be received by any organization or individual who has a "down-link" receiver. Currently only Arizona State University and the University of Arizona have "up-link" capability. Many of the community colleges and Northern Arizona University have "down-link" receivers. The universities with ITFS capacity can rebroadcast material received via satellite to the respective receiving sites. When other institutions install ITFS capability, they could use this as a means of dissemination to those who have access to the ITFS signal.

In the past, the relatively high cost of transponder rental rendered satellite transmission less attractive than conventional means using microwave or fiber optic cable. If, however, the audience is sufficiently large or if subsidy is provided by the user, satellite communication is advantageous because it "blankets" an entire region with the signal. It is this wide-spread use that makes satellite transmission practical for engineering courses prepared at two of the Arizona universities for National Technological University, a consortium offering degree programs via telecommunications nation-wide. It is anticipated, moreover, that transponder rental costs may decrease in the highly competitive telecommunications market. Several states are using satellite transmission to serve public schools. Cooperation between agencies serving schools and universities serving a statewide or regional audience has potential for the low population density states of the West, including Arizona.

Satellite transmission is also used to provide national teleconferences to Arizona audiences. Several of these national conferences focusing on topics of interest are made available each year to Arizona audiences which gather at an appropriate location to participate. Many of these teleconferences are provided with two way audio capacity.

SYNTHESIS OF A STATE-WIDE NETWORK

From the preceding paragraphs, it is obvious that there are major resources currently available in the area of telecommunications and that more are likely to be added in the near future. What is missing is a vision of what a statewide comprehensive network could do to serve Arizonans, urban and rural citizens alike. What is needed is a mechanism for planning and implementing an orderly sequence of steps that would elicit the support of the state to provide the necessary resources to create a network, one that would expand and extend educational services statewide. In the material which follows, a mechanism will be presented for the organizational structure and an outline of a possible first phase for the creation of the Arizona Telecommunications Network.

ORGANIZATION FOR DELIVERY OF DISTANCE LEARNING SERVICES

The introduction of technology and particularly telecommunications into the provision of educational services at a distance creates numerous problems for the providers of these services that have not heretofore been confronted. In Arizona most of these problems will be solved by cooperative action among the public educational entities and the state agency that manages the telecommunications system. Stimulated by the proposed expansion of the state telecommunications network, representatives of the principal providers of service and the State Department of Administration began a series of meetings in the Fall, 1987. As a result of these discussions, a proposed organizational structure has emerged that, if implemented, provides for planning a statewide telecommunications network and coordinates the offerings of the various elements that would use the network to deliver educational services.

ARIZONA EDUCATIONAL TELECOMMUNICATIONS COOPERATIVE

The mission of the Cooperative is to assist the public educational entities in the fulfillment of their teaching, research, community service and administrative functions through cooperative planning, development and use of telecommunication systems and services. The planning group proposed the following set of goals for the Cooperative:

- o Encourage planning and policy development by state education institutions, boards, accrediting agencies, and the state executive and legislature to develop and implement state policies that direct how learning technologies are to be best integrated and funded at institutional and system levels.

- o Facilitate the development of administrative, academic, research and student service infrastructures in individual educational entities that will enable advantageous use of telecommunications systems and services.

- o Establish planning guidelines for the development of individual entity telecommunications master plans to achieve compatibility in form and nomenclature.

- o Establish appropriate common technical and operating standards for telecommunications equipment and service levels in order to facilitate interconnectability of systems and services.

- o Encourage educational entities to develop telecommunications system and service plans that are consistent with master planning guidelines; and to file a copy of such plans with the Arizona Educational Telecommunications Cooperative.

- o Coordinate the development of a state educational telecommunications master plan which accommodates the needs and goals identified by Arizona public educational entities and gives direction to technical compatibility and interconnection of potentially shareable systems.

- Facilitate access to shareable telecommunications systems and services through development and distribution of a resources guide including access criteria/policies, procedures and user fees; and, where appropriate, work with operation centers in order to facilitate interagency sharing of technology systems.

The following are illustrative tasks that the Cooperative may need to undertake in order to achieve its goals. It will identify specific activities that should be facilitated and encouraged among those educational entities that develop, operate, and seek to share public telecommunication systems and services.

- Gather and disseminate appropriate information to individuals at the several participant levels and to prospective participants.
- Coordinate/facilitate collaborative efforts in research such as needs assessment and evaluation of programs and projects.
- Coordinate/facilitate cooperative funding initiatives ranging from project gifts/grants to general legislative support.
- Coordinate/facilitate joint development of educational programming such as courses of instruction, seminars, conferences, and community services.
- Carry out liaison and coordinate cooperative projects with other Arizona entities and multi-state organizations such as WICHE.
- Where appropriate, coordinate/facilitate group buying of software and hardware resources.
- Where appropriate, coordinate the operation of networking centers to facilitate shared use of interconnectable systems.

Several different models for the organization of the Cooperative were considered by the ad hoc group and a structure is proposed:

- Membership in the cooperative is composed of public educational institutions and entities which choose to affiliate and the Department of Administration (ex-officio).
- Other educational entities, public or private, may participate on the Councils of the Cooperative.
- Governance of the Cooperative is vested in a Board of Directors consisting of the CEO of each member institution or a designated representative.
- An Executive Committee, appointed annually by the Board of Directors, will oversee the operations of the Cooperative. Its membership will reflect the composition of the Board of Directors and a Board member will serve as its chair. It will have several subcommittees as may be determined appropriate by the Board. To deal with various aspects of the operation of the Cooperative, the members will nominate, as may be appropriate, persons to serve on Councils and ad hoc Task Forces created by the Board. These

elements of the organization enable the members to share information, ideas, experience and expertise; propose and carry out studies; develop plans and recommend actions to the Executive Committee. The Chair of a Council or Task Force is appointed by the Board from the membership of the Executive Committee.

- The Secretariat of the Board and its Executive Committee and Councils could be provided from the staff of the Board of Regents.

The functions assigned to each element of the organization in its initial development are as follows:

- The Board of Directors provides policy direction for the Cooperative and has the responsibility for approving the budget of the Cooperative and for seeking funding for the activities of the organization.
- The Executive Committee serves as the operational component and prepares the agenda for the Board meetings. The committee and ad hoc Task Forces make their recommendations to the Executive Committee.
- Initially, some Councils will operate in the area of technology systems: Telephones; Broadband Media; and Data/Computers; and other Councils will operate in the area of services: Academic Policy; Distance Learning; Administrative Users; Research Users; and Community Service Users. Additional Councils and/or ad hoc Task Forces will be organized as required. Such ad hoc Task Forces may be organized from among participants in two or more Councils to deal with matters that require cooperative attention from several points of view; e.g., systems, policy, users, etc. Other Task Forces may be organized to deal with short-term issues or opportunities that do not fall within the purview of existing Councils.
- The Secretariat of the Cooperative will include a staff officer of the Arizona Board of Regents and will, with appropriate other personnel, provide support services to the Board of Directors, the Executive Committee, the Councils, and the ad hoc Task Forces.

OPERATION OF THE EDUCATIONAL TELECOMMUNICATION NETWORK

Experience in other states and the advice of consultants strongly support the view that the technical support services could be provided a single state-wide agency. The planning for and coordination of the program aspects of the service to be provided by the respective educational elements seem best handled by a consortium, i.e., the Cooperative.

Responsibility for the voice and data transmission for state agencies is vested in the Telecommunications Division of the Department of Administration of the State of Arizona. It would be potentially feasible to create another statewide agency to deal with educational telecommunications. Such duplication, however, would not appear to be justifiable on a cost-effective basis. Duplication of towers and buildings as transmission sites for a second microwave system can be avoided. With proper advanced planning and construction, one complex would handle several transmission capabilities. Operational costs of engineers and maintenance personnel, equipment to reach the transmission sites, road maintenance and other essential functions can be minimized. Redundancy to the state system can be provided by the educational system and used in an emergency.

Details on the financing of the added operational costs for the educational telecommunications network must be agreed upon. It should be recognized that the added cost for additional networks on the same physical structure is marginal. Use of the main state network after normal business hours also represents a marginal cost and the cost-recovery charges should reflect this fact.

Periodic reports on the operation of the network will be made to the users, including the members of the cooperative to the respective Boards, and to the Executive and Legislative branches of government.

A PROPOSED EDUCATIONAL TELECOMMUNICATION NETWORK

Given the circumstances existent in Arizona, the use of a variety of "distance learning" strategies needs to be pursued, using whenever feasible, the present resources of the universities and the state. A key element in this development is the creation of a full-time, two channel microwave link between Winslow in the Northeast, Kingman in the Northwest, Flagstaff, Phoenix, Tucson, Douglas in the Southeast and Yuma in the Southwest. Included in the system would be NAU, ASU (Tempe), ASU-WEST, the Maricopa Agricultural Center of the U of A, U of A (Tucson), the Sierra Vista and Yuma Centers, and the community colleges located along the path. It would be feasible to construct this network in several steps over a period of time (Figure 1).

The current plans of the State Department of Administration are to create a voice/data microwave network serving most of the same population by 1989. Initially (Phase 1) only the Winslow to Douglas "backbone" would be served by land-based microwave technology. The remainder of the state would be connected to the "backbone" of the network by leased telephone circuits. Presumably economy would dictate that the Educational Telecommunication Network would make great use of the facilities created for voice/data linkages. Present demands for voice/data do not justify creating a microwave link to either Kingman or Yuma for this purpose alone. If educational usage justified the microwave linkage, the voice/data network could replace its telephone circuits on these segments of the network.

In addition to the microwave linkages, it is proposed to provide an Interactive Television Fixed System (ITFS) in each community along the path of the network to deliver courses and other educational material to schools, other multi-user sites and cable systems. As technology improves the quality of reception and reduces its cost, households may be equipped to receive the signal.

Through cooperation with the community colleges' microwave telecommunication systems, university programs could be broadcast when that system was not normally in use. If demand for services justified, the ETN could be expanded using existing microwave towers. The University of Arizona currently has a microwave link to Fort Huachuca and proposes to expand it to the Cochise Community College campus in Sierra

Vista. This expanded network would give an estimated 90 percent of the population of Arizona access to off-campus instruction and other educational services in proximity to their work stations or their homes. If all of the community colleges subsequently developed a system to serve their service area and if the ETN were expanded to reach Eastern Arizona College in Thatcher, only a few sparsely populated areas would be beyond access to service via microwave and ITFS.

A diagram of the Educational Microwave Network and that of the Department of Administration is presented in Figure 1, at the end of this report. While detailed planning for and funding of construction of the ETN is progressing, it is proposed that transponder time be leased to provide educational services to schools, college courses and other programming to audiences that cannot be reached by the microwave linkages proposed in Phase 1. This would augment the ASSET program for schools and provide convenient scheduling of courses that might in certain locations be interactive via telephone circuits provided by the state voice/data network.

RECOMMENDATIONS

- The appropriate governing boards and state agencies should authorize the organization of the Arizona Telecommunications Cooperative as a means of facilitating planning for and delivery of an expanded opportunity for "distance learning" at the elementary, secondary and post-secondary levels. A structure for the Cooperative is proposed.
- The Cooperative should undertake studies to determine the prospective need for distance learning within Arizona and develop plans for providing those services that appear to be economically feasible.
- Using existing or soon to become available capability for telecommunications, the Cooperative should devise a coordinated program of expanded offerings to rural Arizona.
- The Cooperative should develop plans for a land-based microwave system that would provide linkage between the three public universities and the rural areas of the state..
- The Cooperative should seek resources to conduct an experiment on the use of satellite telecommunication to provide a statewide service to schools and access to university courses and information services.
- The Board of Regents and the Board of Directors for Community Colleges should jointly address the issue of multiple use of telecommunication courses produced by their respective institutions and develop policies protecting the interests of the public, the sponsoring college or university, and the faculty.

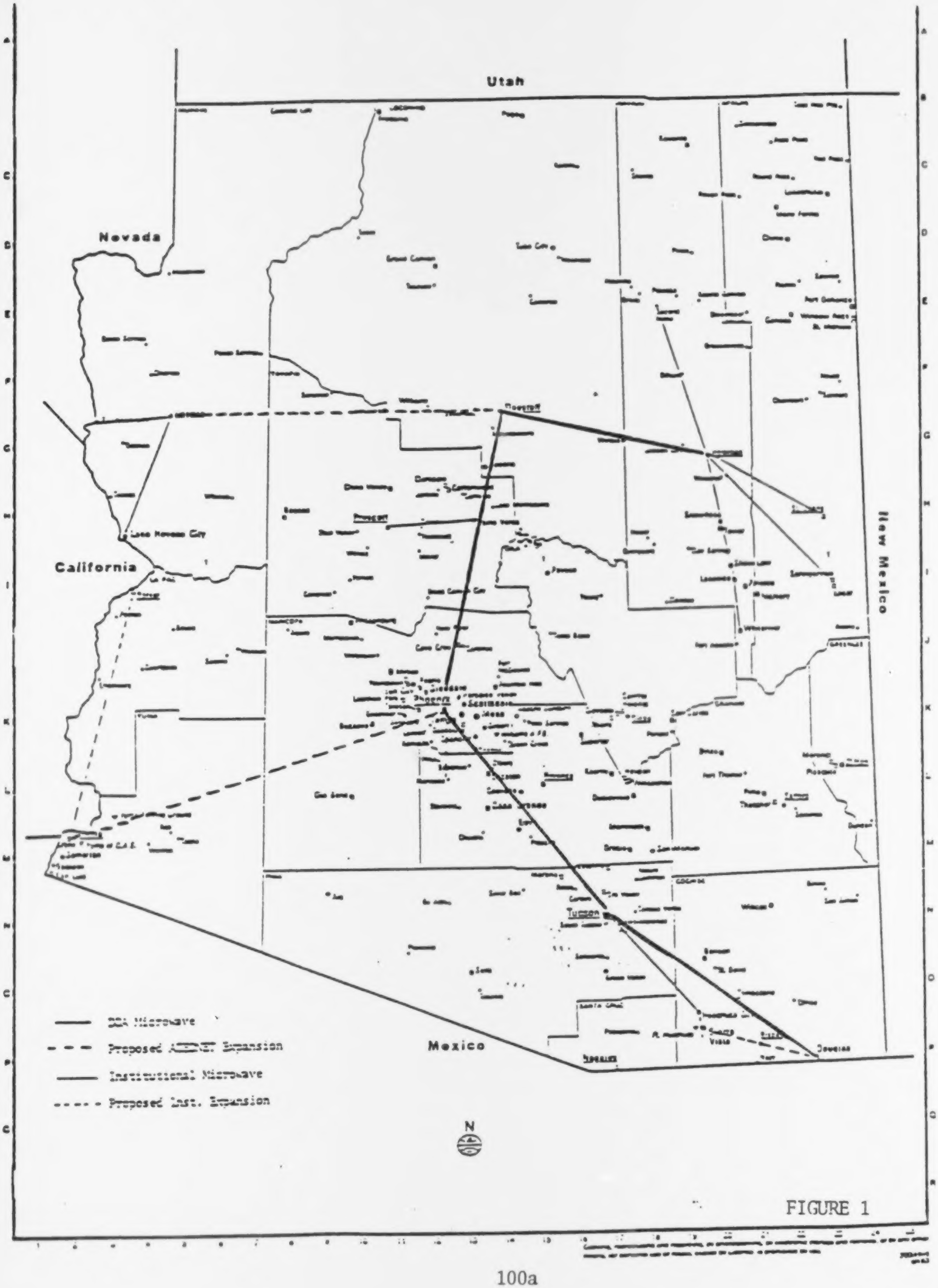
Utah
Nevada
California
New Mexico
Mexico
Lake Havasu City
Flagstaff
Prescott
Phoenix
Scottsdale
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FIGURE 1

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BARRIERS TO MINORITY ACCESS AND PERSISTENCE IN ARIZONA'S UNIVERSITIES: PERCEPTIONS OF STUDENTS, FACULTY, STAFF AND ADMINISTRATORS

JOHN J. WOOD

INTRODUCTION

Alexander W. Astin, in his recent book, *Achieving Educational Excellence*, maintains that "the major purpose of any institution of higher education is to develop the talents of its faculty and students to their maximum potential.[1] This raises the question of equity in talent development, and Astin argues that "the achievement of equity, like the development of talent, is one of the fundamental purposes of American higher education."[2] The WICHE Regional Policy Committee on Minorities in Higher Education concludes in its report, *From Minority to Majority: Education and the Future of the Southwest*, that "changing the existing patterns of minority education is vital to the future of the Southwest and, indeed, of the nation as a whole. It is vital for reasons of fairness and justice [equity]. It is also vital for continued economic growth and social stability."[3] The existing patterns of minority education in Arizona (Fig. 1) show clearly that we have not achieved equity. There are major deflections of minorities from the educational stream, particularly at the transition or juncture represented by enrollments in community colleges and enrollments in universities, and in the percentage of minority graduates from universities in the state. The disparities will become even more significant socially, politically and economically as Arizona's minority population approaches 50% in the foreseeable future and if the present patterns of minority education continue.

This working paper is one of a series that considers issues of minority access and persistence in Arizona's universities. It presents themes abstracted from personal interviews with minority students, faculty, and staff, and minority and non--minority administrators at Northern Arizona University, Arizona State University, and the University of Arizona conducted on the campuses in late January, February, and early March, 1988 (Table 1).

The interview project was designed to gather information from persons within the universities who are in the best position to know about barriers to minority access and persistence. Their perceptions, evaluations of their experiences, concerns, and ideas are essential to our understanding of the problems and their

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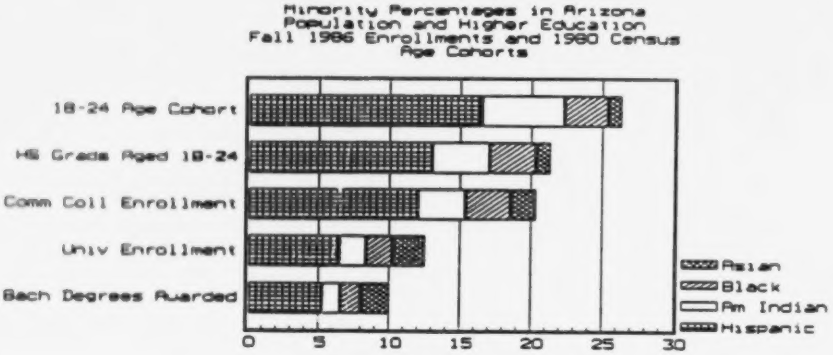
John J. Wood is a professor at Northern Arizona University where he has been teaching antthropology for 22 years. He is a cultural anthropologist with a decade of applied research experience with the Navajo in northern Arizona. He was a member of the Arizona Universities' Study Group on Minority Student Recruitment and Retention, has served as the chair of the Affirmative Action Committee at Northern Arizona University, and has been involved in policy research and evaluation of minority affairs in Arizona universities for the past eight years. His recent publications deal with the impacts of Navajo livestock reduction, and land and religion in Navajo culture.

FIGURE 1.



SOURCE 1980 Census, AZ DES, ABOR

TABLE 1 - INTERVIEW MATRIX

Categories	NAU	ASU	UA	Universities Total
Non-minority Admin.	4	8	10	22
Total	4	8	10	22
Hispanic				
Student	1		1	
Faculty		1	2	
Staff	1	1	1	
Admin.	1	1	4	
Total	3	3	8	14
American Indian				
Student	2	2	1	
Faculty		1		
Staff	2		1	
Admin.				
Total	4	3	2	9
Black				
Student		1	1	
Faculty	1	1		
Staff		1	1	
Admin.	1	1	1	
Total	2	4	3	9
Asian				
Student				
Faculty			1	
Staff				
Admin.		1	1	
Total	0	1	2	3
TOTAL	13	19	25	57

Males = 37

Females = 20

solutions. An understanding of the universities' current efforts to recruit and graduate minorities is equally important. These two sources of information, together with an awareness of which programs, policies, and attitudes improve access and persistence will help the Task Force develop recommendations that have a good chance of having a positive impact. The universities' current efforts and our recommendations to the Task Force are the subjects of future working papers.

METHODS

Interviews with minority students, faculty, and staff were arranged at ASU by Dr. Miguel Montiel, Assistant Vice President, Academic Affairs, and at UA by Dr. Manuel Escamilla, Assistant Vice President, Student Affairs. At NAU, Dr. Anthony Ross, Dean of Students, and Tanya Gorman, Director, Developmental Semester Program, helped me organize interviews with students and staff. We attempted to arrange interviews with representatives of each minority in each personnel category, but this was not always possible. Overall, though, the sample is reasonably representative. Several of the students interviewed are student leaders; most staff members are supervisors in student affairs; and faculty range from relatively recent hires to tenured professors.

Interviews were scheduled for 30 minutes, but they frequently lasted an hour. All were relatively unstructured. After explaining the project, I asked the students, faculty and staff one general question: "What are the barriers to minority access and persistence at your university?" Without exception, their responses were thoughtful and candid. I took extensive notes in the interviews. Later, I transcribed the notes and categorized statements and observations in my notes to develop themes.

I also met with administrators in eight principal institutional sectors (Admissions; Financial Aid; Counseling, Educational Support, Advising and Placement; Academic Affairs; Student Affairs; Graduate and Professional Schools; Affirmative Action; and Central Administration) at each of the universities to introduce and explain a narrative questionnaire concerning minority affairs in their areas of responsibility. Our discussions often ranged widely over the area of minority access and persistence, so these discussions are included in the present sample as interviews.

THEMES

Themes, in this study, are assertions that describe a recurring, unifying subject or idea, a series of common threads running through a significant number of interviews. I have identified 22 themes in my interview notes (Table 2, end of report). Some are expressed as quotations or paraphrases of interviewee statements; others are my phrasings. In the discussions that follow each theme, I have tried to represent what was said as accurately as possible with a minimum of interpretation. The themes may be grouped, more generally, into three categories: preparation and student access; the cultural field; and university policy, organization, and programs.

PREPARATION AND STUDENT ACCESS

1. High schools are not preparing students for college.

Poor preparation for college is one of the most pervasive themes in the interviews; faculty, staff, administrators, and especially students in all three universities see this as a major barrier to access and persistence. Most perceive preparation as the high schools' responsibility.

Poor preparation is partly a matter of lack of continuity between high school and university environments. Specifically, students do not have the study habits that are necessary for success in the universities, and they do not learn how to organize their time; standards are low relative to universities; library research is not emphasized in high school; and students lack skills in organizing social interaction.

Critiques of preparation also address curriculum and teaching. Learning how to write correctly and other language skills are important, as are more mathematics preparation and better science backgrounds. According to one student: there are not enough qualified teachers; the elite students do not go into teaching, and this is particularly true for minorities.

Inadequate counseling is singled out as a contributing factor, mainly by students and by some staff who work in recruiting. It is said that some high do not bother to keep informed. Students fill out the wrong forms and do not get them in on time. Counselors help students who they think are going on to college; they do not spend time with others, even if the students indicate a desire to go on. They only contact students with the best grades for scholarships, they do not look at other criteria. Students are still tracked in high schools, and counselors often suggest the vocational track for minority students rather than encouraging them to go on to college.

Finally, one person called attention to the school-age population in the Department of Corrections. She said that "education dollars" are involved, but that school districts do not track the students. She wonders, "What happens to them?"

2. A deflection from the educational stream occurs in community colleges.

This theme describes observations and concerns of several administrators that minority students frequently do not continue in higher education after enrolling in community colleges. One person thinks that students do not continue because of immediate occupational needs and desires, and because of the difficulty in transferring to universities. Suggestions include articulation agreements between community colleges and universities, and the need to encourage students to transfer after completing their community college education.

3. Recruiters need to reach out to students.

A Hispanic student feels that traditional methods of recruiting are not working, and that the universities need a "radical" approach. He thinks and other persons interviewed agree that there should be more personal contact, follow-up and follow-through. Minority students often cannot afford long distance calls to check on their applications or to get answers to their questions, for example. "Consistency and fervor", and the "athletic model with lots of follow-up" are phrases used by a person with almost a decade of experience in minority recruitment programs to describe the kind of attitude and approach necessary for success.

Continuity in recruiting students and making them part of the campus was also emphasized by one student. He suggested that student recruiters serve as mentors when the students they recruit come on campus. Another recommendation is that minority representatives serve on admissions committees.

4. Increasing admissions requirements and reliance upon standardized tests for program entrance are barriers to access for some minorities.

Many of the comments in this category come from American Indian students, faculty and staff. Low ACT (American College Test) and PPST (Pre-Professional Skills Test) scores are access barriers, according to one staff member. There are admissions exceptions, but minority students may not take advantage of exceptions if they do not make the admissions cutoff. An education faculty member says that there are fewer minority students in the education classes he teaches today than in the past, which he attributes, in part, to admissions requirements.

Multiple admissions criteria might be the answer. Graduate colleges and professional schools and colleges at the three universities are already considering more flexible criteria.

5. There is not enough effort expended in recruiting Blacks, American Indians, and quality out-of-state minority students.

The few statements that this theme summarizes suggest that there should be special attention given to recruiting Blacks, American Indians, and "quality out-of-state [minority] students," and that flexible admissions criteria need to be employed.

6. The commitment to students extends to post-graduation placement.

Some graduates have job-entry problems, and special pre-graduation relationships with employers and placement help were offered as solutions by several individuals. The placement office at one university is said to be concerned with "reverse discrimination" in its refusal to set up special placement services for minorities, even for employers who are specifically looking for minority applicants. At another university the need to have a place for employers to come to recruit special populations was expressed.

For targeted professions, emulating California's program of recruiting, educating, and then employing their "home-grown" minority graduates was proposed as an answer to post-graduation employment, and to increasing the size of the university affirmative action recruitment pool.

7. Students are frustrated by financial assistance procedures, and the lack of available financial aid.

In the opinion of one financial aid officer, meeting deadlines and filling out forms correctly are the most serious problems in the financial aid area, not money. Other interviewees agree wholeheartedly with the first two points, and they add federal regulations that make it difficult to supplement aid. Difficult terms, complicated procedures, and numerous, sometimes unreasonable, regulations construct a maze that is difficult to negotiate, even for those with experience in filing forms for other purposes. At one university a random sample of student records showed that "financial aid" was the most quoted barrier. Lack of financial aid and difficult financial aid procedures are often cited as reasons for leaving the university, but, according to a financial aid counselor who works closely with students, the real reasons for leaving are often different.

An American Indian staff member says that getting paperwork in early is a major problem: "We [American Indians] do things at the last minute." Another interviewee recommends financial aid set-asides and residence set-asides for late applications.

A Black student feels that there are too few scholarships for Arizona to be competitive in out-of-state recruiting. Too few in-state scholarships was mentioned as a barrier by others. Another student suggests that working on campus for about 20 hours a week would help students meet their financial needs, and help with making friends, with work skills, and in organizing time.

8. Scholarships and graduate assistantships are not competitive for recruiting minorities.

The biggest problem in attracting students to graduate and professional schools is "financial support, both entry level and full-support," says one Graduate Dean, "the Arizona system is not competitive." Another Graduate Dean says that "The top range of fiscal Graduate Assistantships is not enough to compete for good students. This is the most pressing problem." Inadequate stipends lead to hiring students who are "place-bound" or "incompetent."

THE CULTURAL FIELD

Universities have distinctive ways of life and thought. They share common traditions and functions in society, yet each has unique characteristics. Each university is also a cultural "field," to borrow a concept from physics, a space within which lines of cultural force are active. In a university, to pursue the metaphor further, there are centripetal forces that move students toward the center, and centrifugal forces in the cultural field that move students outward, away from the center. Some of these "forces" are properties of the university cultures and some are properties of the students' home cultures. The themes in this section portray the centrifugal forces in the cultural fields of Arizona's universities, perceptions of how some of these forces might be canceled or transformed and how some of the centripetal forces might be augmented.

9. Some people in the university lack sensitivity.

Sensitivity in this context means being aware of cultural differences and similarities and acting positively. Examples of lack of sensitivity range from discrimination and prejudice to not knowing what kinds of things people relate to or identify with. Several persons mentioned different treatment by faculty and staff. Several persons also cited instances of lack of awareness such as: not knowing how American Indians ask for help; not knowing how long it takes to build a trust relationship; not recognizing symptoms of homesickness and loneliness; not recognizing how discouraging unfriendly office personnel can be; and not recognizing how important music, dance, food and language are to a sense of identity.

There is strong consensus that something needs to be done to encourage sensitivity on the campuses. Some staff workshops, student advocacy, and support groups are already in place or in the process of development.

10. "When you come on you know you're a minority on an all-white campus."

The Black student's statement quoted above was in response to a question about the image that his campus presents to students when they arrive. It encapsulates a recurring idea in some interviews: the university environments present initial images to minorities that give them the impression that they might not be welcome.

"You're on your own when you get here," is another statement that expresses the same idea. A perception of one university expressed by a student is, "It's too hard." The same person, an American Indian, said that the message she got when she arrived was, "I don't belong here." This impression of not belonging and unfriendliness is repeated in statements by other students in other ethnic groups.

"People are oblivious to the context of this university; it's in the Southwest!", one Hispanic faculty member exclaimed.

A staff person from the same university said that the campus needs something that draws students to campus; for example, art -- something Southwestern.

11. American Indians get lost on campus; they need their own space.

This theme came up in interviews with American Indians at ASU and UA. Interviewees feel that the numbers of American Indians are so small that it is impossible for them to meet each other on campus. They see a need for a center to serve this and other important functions: it would be a place for new freshmen to come when they arrive on campus, to meet faculty, and for outreach; it would be a place for peer support, studying, and tutoring; it would serve as a meeting place for students and potential employers, tribal officials, and family members; and it would give students something to relate to as Indian and "the comfort of being at home." They want a recognized, separate office or center of their own.

I asked members of other ethnic groups if they thought a center would be helpful. One Hispanic staff member thought a multicultural center located in the student union might be desirable. A Black student said his "white" friends say: "If you want to be equal, don't form groups." My impression is that Blacks and Hispanics are less interested in a special center, but that impression should be checked carefully at each university.

12. Some minority groups get more resources and attention than others.

The feeling that some minority groups get more resources and attention than others was expressed on all three campuses. The common perception is that Hispanics are emphasized. Recruitment, scholarships, programs, and staff are all mentioned in this regard. The feeling is expressed by both Blacks and American Indians, perhaps more strongly by the former. Blacks say that Hispanics and American Indians, and sometimes Asians, are emphasized; American Indians say that Hispanics and Blacks get more attention.

13. The university wants minorities to participate in campus activities, but students think activities are for whites.

A consensus view of Black, American Indian, and Hispanic students is that students need to participate in campus activities, to help them feel at home. Support groups, like the Native American Club, are a major reason for students staying in school, according to an American Indian student. But "they [the university] don't get people interested," a Hispanic student said. She also said that the reason why the schools do not offer more minority-oriented cultural activities is because "schools try to enforce the dominant culture." A staff member at another university said that there is "no imagination" shown in bringing non-white entertainment to campus. The upshot of all this is the impression, expressed succinctly by a Black student, that campus activities are for whites.

14. Minority is not a homogeneous category, and minorities are not homogeneous groups.

A number of faculty, administrators, and students are concerned that the label "minority" obscures the special needs of different "protected" groups. Regarding retention, a Black faculty member said: "It's a big issue." Native Americans and

Blacks come in a "revolving door." They are often lumped together with Hispanics. "Problems for others are not necessarily being addressed by attention to just Hispanics."

There are major cultural differences within the groups categorized as "minorities." And, within each ethnic group so categorized there are cultural differences. Stereotypes lead to misunderstandings and problems in meeting needs. The "majority think all Native Americans are alike," an American Indian student said. An American Indian staff member observed that not only are American Indians from different tribes, they also have different school experiences; for example, boarding schools and public schools. Another stereotype is that all Asians do well, so they do not have any special needs. Among all the groups there are those who want to identified as minority, and those who do not. "We have to be flexible," said one minority administrator.

15. There are important differences in students' home cultures and campus cultures.

This theme was especially prevalent in interviews with American Indians. "Personal problems at home" is a common reason for leaving school, according to an American Indian staff member. This usually means family problems, dependent children, and the needs of younger siblings. American Indians "are not very independent" she said. They feel isolated without their families and with no friends.

Sometimes they don't attend class if they don't like the teacher. "Competition is new; it's all we see and hear when we get here. We are reluctant to ask for help. We don't know what we're getting into. At home we are surrounded with other Native Americans. Here we don't know how to relate." Sometimes they wonder how to get home for ceremonies. On campus they ask questions like, "Why do we have to take Liberal Studies?"

Some have problems with roommates. One Navajo's roommate kept snakes [contact with snakes is very dangerous to Navajos]. Some American Indian girls complained that their roommates got too many calls; they did not respect their privacy. And they cannot move because residence halls require at least a full month's stay.

American Indians tend to leave in the first 10 weeks. They leave, "looking toward home." When they are getting ready to leave, they show symptoms of loneliness.

The theme of cultural differences is not limited to American Indians, however. A Hispanic student said that when he arrived on campus, the food in the dining hall was "shocking" he was used to beans and tortillas. His freshman year was lonely; he had very few friends and "Girls won't talk to you." Some of the friends he made, American Indians and "Mexicans," did not make it to the second semester.

UNIVERSITY POLICY, ORGANIZATION AND PROGRAMS

16. The universities are "apathetic" in hiring minority faculty, staff, and administrators.

"Apathetic" is a term used by a Hispanic faculty member to indicate his feeling that there is no strong commitment to hiring minorities. The feeling that minority faculty, staff, and administrators are an important "presence" on campus that demonstrates commitment is widely shared.

Also widely shared is the conviction that minorities in positions of authority and responsibility serve as important role models for students. "Students need to see people who are like them," and "We are people concerned about our own people" are two statements that illustrate this conviction.

Interviewees were quick to point out that statements like "they're not out there" or "the pool is too thin" are common responses to requests for a stronger commitment to affirmative action. An American Indian's response was: "That's not true." A Hispanic said that the "buddy system" in hiring, which is "natural," works against affirmative action. A Hispanic from another university suggested that if the "pool is too thin," why not have the universities produce the needed professionals, starting with undergraduate students if necessary.

17. Good minority faculty and staff get overworked and "burned-out," and they are passed over for promotion and tenure.

Retaining and promoting faculty and staff are important for recruiting and retaining students. An American Indian staff member says that in her experience Indian students will keep coming to a university, generation after generation, if they know someone personally. Also, she says, students need role models and need to know that the university is open and willing to help. Minority faculty and staff who serve as role models, because there are so few, are often overworked. They have professional demands as well. If they spend time working with students, and not in getting grants and publishing, they run the risk of being denied tenure and promotion. One person describes this process in her own words as: "They are used and then they get dumped. The students lose."

Another concern is the practice of "going outside" to fill positions of responsibility. "If you want to move up, move out," is the message according to a Black staff member. "Use people here," he said, "give them training in management. Motivate them." There are internships, but the perception is that they are for "whites."

18. There are not enough persons to staff programs with high demand for services.

Several staff members, from all three universities, and one student feel that additional personnel are needed in high demand programs. Staff are spread thinly because of multiple responsibilities or high demand. For example, a staff member at one university saw 2,500 students last semester. Students have difficulty finding help, and sometimes have to wait in long lines. This is especially acute at peak periods, such as during registration.

19. There has to be university-wide commitment to recruiting and retaining minorities.

Most of the comments supporting this theme refer specifically to the universities, but the Board of Regents is included by some in a more global view of responsibilities. There are two related shades of meaning in this theme. One is a recommendation that the universities commit, as institutions to recruiting and retaining minorities; the other is that the commitment be coordinated, and not represent a piecemeal effort.

A Hispanic staff member complained that there is no one central place to coordinate efforts and collect statistics: "No one pulls it together and oversees it." Another comment, from another university: "On the whole, I think the university pays lip service to minority students." A Hispanic faculty member believes that "If the university thinks it is important, it will somehow find a way."

20. Where programs for minorities are placed within the university should be logical in terms of reporting structures and balance of power.

This issue is primarily a concern of faculty, staff, and administrators. It was raised explicitly at one institution, but persons in all three universities touched upon the issue in different contexts. General recommendations include: the universities need to develop the capacity to solve problems; they need good people well placed in the institution; and a good sense of management and organization is important.

A fundamental organizational question that relates directly to reporting structures and balance of power is: Should the administration of programs be centralized or decentralized? Arguments advanced for centralization see advantages in coordination of effort and accountability, and the possibility of more continuity at critical intervention points. Arguments against suggest that centralization does not end up encouraging people to work together; coordination is really forced; it models segregation; and it puts programs at high risk for justification because of their higher profile. All persons concerned would agree, I think, that management and organization of minority recruitment and retention programs need to be reviewed. A review of the logic of placing programs in Student Affairs or Academic Affairs is a high priority for some persons.

21. Student development is a function of the entire university, not just Student Affairs.

The perception of some faculty is that certain functions, for example the improvement of basic skills, advising, tutoring, and work with student scholars, have no business being in Student Affairs, but they say that faculty who are interested in working with students outside of their "normal" activities are not recognized or rewarded. Student Affairs people, on the other hand, say that many aspects of student development, such as tutoring, have simply fallen to them, and that they would welcome faculty input. One Hispanic administrator puts it very well: "The faculty play an insignificant role in student development outside of the classroom."

Student Affairs personnel feel that the faculty need to reach out; to make an effort to get to know students. Advising by Student Affairs staff is often unacceptable to academic advisors, they say. And, the student is caught between two different ways of looking at student needs. "Faculty have to see minority recruitment and retention as their problem too."

The biggest problem in involving the "academic side of the university," according to a faculty member who has an interest in student development outside of the classroom, is: "Academic units are plainly not interested."

22. The basic problem is fostering human attention when the numbers are small; creating things that meet their needs.

The title for this last theme, which deals with programs and evaluation, is paraphrased from a poignant statement by a Black administrator. There were several specific proposals mentioned in the interviews for creating things that meet minorities' needs mentioned in the interviews, ranging from the need for special resources to the need for knowing what works and the need to build evaluation into every program.

Graduate education, with its attention to small numbers of students with special needs and its emphasis on a mentoring relationship was suggested as a successful model that universities could emulate for undergraduates. In fact, mentoring programs were the most common recommendation.

Other recommendations include: enhancing access to faculty; socializing people into the system; encouraging retention efforts in particular colleges; on-going monitoring of efforts; and resolving the issue of either providing "generic" functions, with little special attention paid to minorities, or providing special emphases and programs.

CONCLUSIONS

Almost everyone I talked with is sincerely concerned about minority access to, and persistence in, Arizona's universities. The Universities have programs in place now, and in the last three years there have been significant, positive changes in policy and organization that have had an impact on minority access and persistence. However, the overall conclusion from the interviews summarized here is that there are still serious problems, and that we have a long way to go if we want to change the existing patterns of minority education in the state. The problems are not limited to the universities; there is attrition in the entire system of public education in Arizona, especially at the junctures or transitions between levels.

People who are in the best position to know about the barriers to minority access and persistence in the universities have identified three major areas of concern: preparation; interactions within what I have called the "cultural field"; and university policy, organization, and programs that affect minorities. They also offered suggestions for improvement that are reflected, directly and indirectly, in the themes abstracted from their statements and observations.

TABLE 2.

TABLE 2. INTERVIEW THEMES

A. PREPARATION AND STUDENT ACCESS

1. High schools are not preparing students for college.

2. A deflection from the educational stream occurs in community colleges.

3. Recruiters need to reach out to students.

4. Increasing admissions requirements and reliance upon standardized tests for program entrance are barriers to access for some minorities.

5. There is not enough effort expended in recruiting Blacks, American Indians, and quality out-of-state minority students.

6. The commitment to students extends to post-graduation placement.

7. Students are frustrated by financial assistance procedures, and the lack of available financial aid.

8. Scholarships and graduate assistantships are not competitive for recruiting minorities.

B. THE CULTURAL FIELD

9. Some people in the university lack sensitivity.

10. "When you come on you know you're a minority on an all-white campus."
11. American Indians get lost on campus; they need their own space.

12. Some minority groups get more resources and attention than others.

13. The university wants minorities to participate in campus activities, but students think activities are for whites.

14. Minority is not a homogeneous category, and minorities are not homogeneous groups.

15. There are important differences in students' home cultures and campus cultures.

C. UNIVERSITY POLICY, ORGANIZATION, AND PROGRAMS

16. The universities are "apathetic" in hiring minority faculty, staff, and administrators.

17. Good minority faculty and staff get overworked and "burned-out," and they are passed over for promotion and tenure.

18. There are not enough persons to staff programs with high demand for services.

19. There has to be university-wide commitment to recruiting and retaining minorities.

20. Where programs for minorities are placed within the university should be logical in reporting structures and in balance of power.

21. Student development is a function of the entire university, not just Student Affairs.

22. The basic problem is fostering human attention when the numbers are small; creating things that meet their needs.

ENDNOTES

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UNIVERSITY SERVICE TO RURAL ARIZONA

ROBERT MACVICAR

In the past 60 years, Arizona has shifted from a predominantly rural state to one in which, in 1988, 76 percent of the population resides in two metropolitan areas, Phoenix and Tucson. Its economy, largely agriculture and mining and smelting in 1940, has been converted into one largely dependent on high technology manufacturing and service industries. Estimates of future growth predict that this transformation will continue with nearly 80 percent of the population concentrated in the two metropolitan areas by 2000.

There are substantial reasons, however, to support the belief that the "other Arizona" consisting of the regions outside the metro-areas offer opportunity for economic growth if they are provided the educational, social and cultural systems needed for the creation of employment opportunities. Agricultural and mineral industries will continue to be significant components of the economy but cannot be expected to provide employment for all of the current population. Tourism and the associated service occupations provide for modest growth, but such employment is largely in the lower wage job classifications. Significant economic development in rural Arizona will require a more highly educated work-force and access to the services provided by the state universities.

The provision of greater access to upper division and graduate programs in the rural counties is an important component for providing both educational opportunity for Arizona residents and a pool of adequately educated personnel to staff expanded or newly entering industry. Given the population dispersion and the likelihood of small demand for the product by local industry, the option of creating, as has been done in more populous states, more baccalaureate level institutions is not justifiable except in the metropolitan areas. This is especially true if the goal is access to more specialized education at the graduate level. If Arizona is to deal effectively with the issue of the economic development of the rural counties, it must find effective and cost-efficient means to deal with these problems of providing post-secondary educational services.

Increasingly, higher education (and particularly research universities) are being viewed as a resource beyond the entity for providing adequately educated personnel. They are the source of much of the basic and applied research. Their faculties are sought as consultants and technical advisors. Their laboratories and computer centers often are unique

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resources. Their libraries provide access to on-line retrieval to national and international data bases. Particularly for the newly emerging "high-tech" small businesses, their ability to use these resources may be crucial to the success of the venture.

In this document, the needs of rural Arizona for educational services will be examined and means proposed for the provision of those that legitimately can be offered by public universities.

THE DEMOGRAPHY OF RURAL ARIZONA

During the past half century, the demographic character of Arizona has changed significantly. The census of 1930 revealed a state with modest population, ranking 43rd in the order of the then 48 states. By 1950, the change to a more urbanized population had begun, but Arizona still ranked only 40th in rank of population. During the succeeding decades to 1980 the process accelerated and during the 1970-1980 period Arizona was second among the states in rate of increase in population largely achieved by a substantial net in-migration. The population by county for the period 1930 to 1980 and estimates for 1985, 1990 and 2000 are presented in Table 1 together with the percentage each represents of the state total.

Examination of the current and projected demographic pattern for the state also reveals that there are essentially only two counties (Maricopa and Pima) capable of maintaining additional institutions of higher education at the baccalaureate level. The third largest incorporated city in Arizona is Yuma with a population in 1985 of 46,455. Flagstaff, the site of Northern Arizona University, is fourth at 38,600, with a significant portion of the population university students. Three cities, one of which is in the Phoenix Metropolitan area, are between 20,000 and 29,999 and nine, one of which is in metro-Phoenix, are between 10,000 and 19,999. With the exception of cities which are part of Metropolitan Phoenix no city of 10,000 or more is in the same county with another. Given the geographic area of the state, the result is a dispersion of those persons who might benefit from higher education. They must commute long distances from their homes or face relocating to the site of either a community college or one of the three public universities. An unknown but significant percentage of these persons are unable or unwilling to commit themselves to either of these options.

Recognizing the dispersed nature of the non-urban population of the state, both Regents policies and Executive Department and Legislative funding practice have encouraged the three universities to provide "extended learning" opportunities. Northern Arizona University has been particularly responsive to this opportunity and has developed an extensive outreach program, particularly in the field of teacher education. The University of Arizona has had for many years a close relation with Ft. Huachuca by providing upper division programming leading to baccalaureate degree completion. More recently, Northern Arizona University has sought to extend educational programs to Yuma in collaboration with Arizona Western College. The UA also seeks funding to extend its programming off-base from Fort Huachuca to nearby Sierra Vista and NAU wants to expand its Yuma efforts to a more fully developed "Center". With the development of these two centers all cities with more than 20,000 population will have access to baccalaureate programs in either a public or independent institution.

This will, however, leave a large percentage of the non-urban population without access to upper division and graduate educational opportunity. What has come to be called "distance education" (more accurately, learning while at a distance from the campus program) can, however, provide opportunity if the requisites for its implementation are in place. Those conditions include:

- A state-wide plan for higher education must be developed through coordinated action by the Regents, the universities, the Board of Directors for Community Colleges and the community college districts and the State Department of Education.
- University policies and procedures must encourage faculty to participate and create the possibility of efficient use of advanced technology.
- University policies and procedures must accept the likelihood that students will receive instruction from more than one institution of the Arizona university system.
- Regential policies must be modified to encourage and reward inter-institutional cooperation in providing distance learning.
- State policies and practices must encourage the efficient use of the state-wide telecommunications network.
- State appropriations will need to be provided for the additional costs of the telecommunication network to meet the requirements for upper division and graduate course dissemination.
- Individual students must be encouraged to use less-conventional means of instruction including the use of computers, video-recorders, video and audio equipped off-campus classrooms, video-cassettes, cable-casting.
- Inter-institutional cooperation among the three universities and the nine community college districts and Navajo Community College will be required if the goal of broad access to essentially all the population of the state is to be achieved.
- Appropriate means must be developed and implemented to assume adequate and equitable cost-sharing of the telecommunication system among the various institutions and the users.

ARIZONA INTERAGENCY TELECOMMUNICATION NETWORK

The Department of Administration of the State of Arizona provides telecommunication services to the various agencies of the state, at the present time using the facilities of the common carriers (e.g. Mountain Bell) to provide the connections. This system is less responsive than desirable to agency needs and is unable to provide for the projected demand of a growing population and hence requirements for voice and data transmission. The current system, moreover, does not provide for transmitting digitalized television signals for video teleconferencing or for extended learning. Data transmission needs of state agencies and particularly future university needs for high speed data transmission to regional and national super-computer centers are likewise not met by the current system.

In response to this situation, the Department of Administration initiated a study of the current telecommunication system in 1986. Based on an analysis of the system management, economic, agency productivity and technology issues, the consultant recommended that the State proceed to procure and operate a telecommunications system. As a follow-up on this proposal, the State commissioned Fluor Technology, Inc. to technically design a system appropriate to the current and projected needs of the State agencies. To meet the objectives of the study, Fluor contracted with Booz, Allen and Hamilton to provide a survey of current needs and known projected needs of the State agencies. Fluor also was assisted by Telecommunications Service International, a firm specializing in traffic studies, which analyzed the needs for telecommunications services.

With this information in hand, Fluor then proceeded to design a cost-effective, Interagency Telecommunications Network (ITN) and submitted its proposal to the Department of Administration. The ITN transmission technology proposal provides a system flexible enough to provide access to voice, data and video transmission. The "backbone" of the ITN would provide for high capacity capability between the major nodal elements at Winslow, Flagstaff, Phoenix, Coolidge, Tucson and Douglas by digitalized microwave transmission. It is proposed that the system would initially be designed to carry voice and data and be capable of expansion to provide two way video/audio transmission for educational users. Several community college districts (Mohave, Navajo, Yavapai, Cochise) have in place or are planning telecommunication networks to serve their respective areas. These and others (Pinal Community Colleges) can be corrected to be "backbone" at modest cost, particularly if coordination in the planning phase is adequate. Presumably, in a longer range future the ITN "backbone" can be expanded to Yuma and Kingman. For the present, these locations and other major centers will be served by lines leased from an appropriate carrier. This would not permit the use of full-color, two way, broadcast quality television to these sites but might permit, after business hours, a more limited quality one-way video, two way audio linkage.

UNIVERSITY TELECOMMUNICATION CAPABILITY

Arizona State University and the University of Arizona have made extensive use of telecommunication for extended learning in their respective metropolitan areas and the University of Arizona has a microwave link to Fort Huachuca. In the Phoenix area ASU has used Interactive Television Fixed System (ITFS) to provide access to industrial subscribers of its programs. In Tucson, the University of Arizona has ITFS capability. Both universities have well equipped production capability for originating one way video, two way audio to remote sites. Both are participants in National Technology University, a nation-wide consortium of universities providing off-campus institutions in the area of engineering and technology via satellite transmission. Both have up-link and down-link satellite transmission capability. Current satellite charges are such that a significant population of users is required in order to permit the efficient use of this technology from a cost viewpoint.

Northern Arizona University has, at present, more modest capability for originating telecommunications for instructional purposes. It is contemplated, however, to use space on the NAU campus for the Flagstaff node of the state telecommunication network. The campus has been provided with a sophisticated internal network and hence the potential for originating live programming is present with modest augmentation in equipment and the provision of technical staff to operate the originating equipment and handle the switching.

It should be noted that several of the community college districts have developed means to use video-telecommunications for serving their clientele. Both Maricopa and Pima districts have a highly developed system. Mohave, Apache and Yavapai districts have systems in operation and hope to expand them. The opportunity for university-community college collaboration in serving students seeking upper division and graduate courses is potentially significant.

TECHNICAL INFORMATION SERVICES

Outside the libraries of the Phoenix and Tucson metropolitan areas and Flagstaff, no major technical collections exist, but the University of Arizona, Arizona State University and Northern Arizona University have extensive collections. Every county of the state has one or more local libraries linked via telephone to a centralized service coordinated by the Extension Division of the Arizona State Library and Archives. The Tucson Public Library is the central node for provision of technical information services including access to national databases; inter-library loan services are provided by the Phoenix Public Library. There is an inward WATS service using an 800 number that provides access to their service.

The University Libraries at ASU, UA and NAU all are staffed to provide access to their collections and services for persons off-campus. Individuals may use the library collections on all three campuses by contacting an appropriate administrator for in-library use. Reproduction services are available on a fee-for-use basis. The three university book collections are also available via the state-wide inter-library loan system. Arizona State University has implemented the most fully developed system of library extension services in its Fee-based Information and Resource Service Team (FIRST). This program provides the following services: computer database searching, custom research service, document delivery, and translation.

ARIZONA COOPERATIVE EXTENSION SERVICE

Arizona is served at the county level by the Cooperative Extension Service, a Division of the College of Agriculture of the University of Arizona. This function was created by the Smith-Lever Act of the Federal Congress in 1916 and is jointly funded by Federal funds through the U.S. Department of Agriculture, the State General Fund and by resources (some in kind) provided by county governments. In addition to its historic provision of technical service to production agriculture, the growing "high tech" aspects of modern animal and plant science makes technical information service to the providers of agricultural inputs a growing aspect of the programs. In addition, the University of Arizona operates the Veterinary Diagnostic Laboratory for the state.

ATTENDANCE OF RURAL YOUTH IN COLLEGES AND UNIVERSITIES

An examination of the tendency of rural youth to take advantage of the opportunities provided for post-secondary education was made by the graduates of the high school class of 1986. Data available from the reports of the State Department of Education, the Community College Board and the three public universities were analyzed to determine to the degree feasible the "college going rate" of this population in every Arizona county. The basic data is presented at the end of this report in a series of tables as follows:

- Table 2, High School Graduates, 1986, by Arizona County of Origin
- Table 3, Community College Enrollments of First-time Entering Freshmen, Fall 1986
- Table 4, University Enrollment, First-time Entering Freshmen, Fall 1986

An examination of the data presented in Table 2 reveals that 71.94 percent of the high school graduates in 1985-86 originated in the two counties of Maricopa and Pima, somewhat less than the 1985 estimate of 75.9 percent of the total population. Conversely, 28.06 percent of the high school graduates of this year lived in the more rural counties of the state.

In terms of attendance, the community colleges enrolled a total of 120,719 Arizona residents in Fall 1986. Of these students 67,685 were residents of the Maricopa County District and 19,916 of the Pima District for a total of 87,601 from the two urban counties or 72.56 percent of the total. This does not recognize that included in the 8,256 students unassigned as "out of district" are some from urban areas enrolled in the rural community colleges. It is believed from discussion with the community college administrators that most of the out-of-district students are actually from the rural areas since the total out-of-district enrollments in the Maricopa and Pima College Districts is 2,218 and almost all of them come from rural areas of the state. The actual number of urban students enrolled in the rural districts can not be inferred from the data available but is believed to be relatively small.

Examination of this data would lead one to the conclusion that the community colleges are serving the non-urban population in proportion to their percentage of the total population. The percentage of the population outside the two metropolitan areas in 1985 was 24.1 and the percentage of total community college enrollments outside the two metropolitan districts was 25.4.

If, however, one examines the percentage of 1985-86 high school graduates who are reported by colleges as having enrolled the following Fall semester, a somewhat different status is evident. For Maricopa County district, 4,930 high school graduates of the prior year enrolled in the Fall semester 1986 for the first time. This represents 32.6 percent of the total graduates of the 1985-86 year. The comparable figure for Pima County is 25.9 percent. Again, these percentages are potentially in error by virtue of movement of first-time students into and out of these districts. From the rest of the state, a total of 7,729 persons graduated from high school in the preceding year and an estimated 1,210 students enrolled in the community colleges the following fall semester, which provided a 15 percent "going rate".

The high schools of origin for the Fall semester, 1986 freshmen class in the three universities are:

County	Students	Percentage
Maricopa	3,136	57.27%
Pima	1,270	23.19%
All others	1,070	19.54%

The number and percentage of high school graduates from the preceding year from the fifteen counties are:

County	Graduates	Percentage
Maricopa	15,127	54.91%
Pima	4,695	17.04%
All others	7,729	28.05%

Thus the rural population of high school graduates of the preceding year attending the public universities of the state is significantly less than is true for the two metropolitan areas.

What is not known is the county of origin of the more than 2,000 students who left Arizona to enroll as freshmen in universities outside the state. It seems likely, however, that a higher percentage of this population comes from the more affluent segment of the two urban counties than from rural Arizona.

It has long been recognized that proximity to higher educational opportunity is a major factor in determining whether or not a student attends an institution of higher education. The unique population of Arizona with a relatively large population of American Indians and Hispanics also contributes to the lower percentage of participation from rural counties.

CONSULTATIVE AND TECHNICAL SERVICES

Every university provides consultative and technical services to Arizonans, both urban and rural. Much of this is on an individual basis, but each university also provides such services through various organized units.

Regents' as well as institutional policy encourages faculty to engage in consultation with clients with certain restrictions designed to protect the institutions and consulting organizations. No formal reports of such services are prepared but anecdotal evidence is supportive of the view that most of this consultation is for agencies and companies in the metropolitan areas. Travel time required to deal with clients in areas of the state remote from the location of the faculty member is a barrier for which no easy solution is apparent. Institutional encouragement to render such service is impacted by the fact that those most requested are also heavily committed to instructional and research duties.

Greater use of telecommunications might facilitate provision of such consultative services. For example, all the county offices of the Cooperative Extension Service are linked by computer terminals to the central office on the campus of the University of Arizona. The University is seeking to establish a video-capability with its major research and extension center near Maricopa.

Consulting services to small businesses operated by American Indian entrepreneurs and tribal enterprises is offered by Northern Arizona University's Center for American Indian Economic Development. This entity has a limited staff and budget and hence is able to deal with only a few clients at any one time. They believe that if additional resources were provided it would be possible to assist not only a larger number of businesses but to provide more helpful assistance. Northern Arizona University also cooperates with the Federal Small Business Administration in providing generalized assistance to small businesses, most of which are in rural communities. Here again, limited resources provide for only a small portion of the potential clientele. The Bureau of Business and Economic Research focuses on northern and rural Arizona in its studies. It responds to requests for information relative to population trends and the economic environment of the rural areas, with focus on the Northern counties.

Arizona State University's College of Business provides a number of services to small businesses but at the present limits most of its activities to the Phoenix metropolitan area. The Hahn Center for Entrepreneurship and Innovation is an interdisciplinary unit in the College of Business that provides conferences and seminars for small business managers. It proposes to initiate in 1988-89 a facility to provide "incubator" service to a limited number of newly organized enterprises. In order to utilize this resource, an enterprise in rural Arizona would need to relocate or begin its development in Tempe. The Hahn Center also sponsors the New Venture Development Council which provides opportunity for entrepreneurs to meet and discuss problems of mutual interest. The Council also conducts seminars dealing with issues crucial to the growth of emerging companies.

The Karl Eller Center for the Study of the Private Market Economy of the University of Arizona provides focus in programing students for entrance into small and emerging enterprises. It sponsors the semi-annual Venture Forums which are available to the owners/managers of emerging firms. The Division of Economic and Business Research prepares analysis on economic trends and assists managers of small business enterprises to use micro-computers for planning purposes. Participants in this program are taught how to develop their own forecasting models and use other applications of market planning methodology.

SUMMARY

A significant portion of the population of Arizona now live and will continue to live in the non-urban areas of the state. The location of the three state universities, two in the metropolitan areas of Phoenix and Tucson, and projections of future population growth makes it unlikely that the needs of the non-urban areas can be effectively served except by an expanded out-reach program by the existing universities. Such expansion should deal with the need for educational programs, particularly at the upper division and graduate level and information and consultation services to enhance the competitiveness of business and industry and cultural enrichment.

The universities, the regional community colleges and the public schools should develop cooperative programs to enhance the likelihood that rural youth and adults participate more fully in post-secondary education.

Expansion of the use of telecommunications by the development of a state-wide communications network that would include interactive video capability should be pursued with the goal of placing such service throughout the state within five years. This network should have as a major goal providing services to rural Arizona by:

- Offering enrichment programming at the elementary, middle and high schools level in schools,
- Offering opportunity to students in small high schools to take courses for which demand is small or teachers are unavailable,
- Offering advanced placement courses in high schools not providing such opportunities to talented students.
- Offering upper division and graduate courses in a coordinated program by the three public universities, with emphasis on areas of significant demand.

The three universities and the Extension Division of the State Library, Archives and Public Records should seek means of facilitating access to information and consultative resources by individuals and entities located in rural Arizona.

RECOMMENDATIONS

- The Board of Regents, the Board of Trustees for Community Colleges and the Board of Education should create a joint commission to continue to examine the needs of the non-urban areas of the state for educational services.
- The Arizona Telecommunication Cooperative should continue to pursue means of expanding the outreach of the universities and the community colleges through joint planning and execution of programs serving both schools and individuals. The Arizona Department of Administration as the agency responsible for the state-wide telecommunications network should assist in the development of an education telecommunications network providing television and computer access among the elementary and secondary schools, the community colleges and universities.

TABLES

Table 1

County	1930		1940		1950		1960		1970		1980		1985		1990		2000	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Apache	17.8	4.1	24.1	4.8	27.8	3.7	30.4	2.3	32.9	1.8	52.1	1.9	55.1	1.7	68.5	1.8	84.2	1.6
Cochise	41.0	9.4	34.6	6.9	31.5	4.2	55.0	4.2	62.8	3.6	85.6	3.2	94.6	3.0	106.9	2.7	129.0	2.4
Coconino	14.1	3.2	18.8	3.8	23.9	3.2	41.9	3.2	49.2	2.8	75.0	2.8	85.8	2.7	100.7	2.6	129.1	2.4
Gila	31.0	7.1	23.9	4.8	24.2	3.2	25.7	2.0	29.5	1.7	37.0	1.4	39.3	1.2	41.5	1.1	45.8	0.9
Graham	10.4	2.4	12.1	2.4	13.0	1.7	14.0	1.1	16.7	1.0	22.9	0.8	24.2	0.8	25.2	0.6	26.3	0.5
Greenlee	9.9	2.3	8.7	1.7	12.8	1.7	11.5	0.9	10.5	0.6	11.4	0.4	9.4	0.3	9.5	0.2	9.1	0.2
Maricopa	151.0	34.7	186.2	37.3	331.8	44.3	663.5	51.0	979.8	56.1	1509.3	55.5	1814.0	57.4	2276.8	58.2	3252.4	61.1
Mohave	5.6	1.3	8.6	1.7	8.5	1.1	7.7	0.6	26.3	1.5	55.9	2.1	73.7	2.3	85.8	2.2	108.4	2.0
Navajo	21.2	4.9	25.3	5.1	29.4	3.9	38.0	2.9	48.2	2.8	67.6	2.5	70.1	2.2	93.2	2.4	98.6	1.9
Pima	55.7	12.8	72.8	14.6	141.2	18.8	265.7	20.4	356.5	20.4	531.4	19.6	586.0	18.5	734.8	18.9	973.7	18.3
Pinal	22.0	5.1	28.8	5.8	43.2	5.8	62.7	4.8	69.4	4.0	90.9	3.3	99.9	3.2	116.3	3.0	149.1	2.8
Santa Cruz	9.7	2.2	9.5	1.9	9.3	1.2	10.8	0.8	14.1	0.8	20.5	0.8	22.9	0.7	31.7	0.8	39.8	0.7
Yavapai	28.5	6.5	26.5	5.3	25.0	3.3	28.9	2.2	37.6	2.1	68.4	2.5	86.4	2.7	104.2	2.7	140.2	2.6
Yuma/La Paz	17.8	4.1	19.3	3.9	28.0	3.7	46.2	3.6	61.5	3.5	88.8	3.3	108.5	3.1	95.4	2.8	130.9	2.5
TOTAL	435.5	100.0	499.3	100.0	749.6	100.0	1302.2	100.0	1795.0	99.6	2716.6	100.0	3160.6	100.0	3890.4	100.0	5320.7	100.0

Source: Bureau of the Census, 1930-1980, Arizona Department of Economic Security 1985, 1990, 2000.

Table 2

County of Origin, High School Graduates
1985-86 School Year

COUNTY	GRADUATES	PERCENTAGE
Apache	650	2.36
Cochise	923	3.35
Coconino	1,039	2.76
Gila	403	1.56
Graham	298	1.08
Greenlee	101	0.37
La Paz	122	0.44
Maricopa	15,127	54.90
Mohave	602	2.19
Navajo	899	3.26
Pima	4,695	17.04
Pinal	910	3.30
Santa Cruz	307	1.11
Yavapai	722	2.62
Yuma	753	6.44
TOTAL	27,551	100.00

Table 3

Community College Enrollments of First-time Entering Freshmen, Fall 1986 Who Were High School Graduates, 1986

COMMUNITY COLLEGE DISTRICT	1986 HIGH SCHOOL GRADUATES ENROLLED	PERCENTAGE
Cochise	237	3.34
Graham	301	4.24
Maricopa	4,930	69.49
Mohave	85*	1.19
Navajo	129	1.18
Pima	1,217	17.15
Pinal	94	1.32
Yavapai	N/A	-
Yuma/La Paz	101	1.42
TOTAL	7,094	100.00
*Estimated		

Table 4

Enrollment of 1986 High School Graduates in Public Universities, Fall, 1986 by County of Origin

COUNTY	ASU	NAU	U of A	TOTAL
Apache	13	28	16	57
Cochise	25	42	53	120
Coconino	14	171	71	256
Gila	13	22	13	48
Graham	3	6	3	12
Greenlee	4	1	3	8
La Paz	6	2	5	13
Maricopa	1,820	574	742	3,136
Mohave	21	56	22	99
Navajo	32	71	9	112
Pima	45	134	1,073	1,252
Pinal	24	20	27	71
Santa Cruz	7	13	37	57
Yavapai	31	54	42	127
Yuma	22	24	44	90
TOTAL	2,080	1,218	2,160	5,480

SURVEY OF FACTORS OF STUDENT ACCESS AND PERSISTENCE IN THE ARIZONA UNIVERSITIES

AUGUSTUS S. COTERA

In order to obtain some degree of insight into the major factors affecting access and persistence of all students in the three universities, as perceived by the students, a survey was conducted of a randomly selected sample of students in the five major ethnic groups at each university. The sample size for each group was designed to be representative of the four major ethnic minority groups with the dominant white group as a control group.

Using a list of student names selected by the offices of admission of each institution, students were contacted by phone and invited to participate by coming to a specific location on each campus to complete a survey questionnaire. The instrument (see Appendix A) was prepared utilizing the expertise and experience of several staff members at each university.

It was established that a total sample size of about 600 students at each university was desirable in order to ensure statistical reliability of data results.

Despite major efforts to contact every student selected, because of incorrect telephone numbers, unanswered calls, or simple unavailability, only about three hundred students at each university were actually contacted. These students did agree to participate. However, of that number, the actual number of participants at each university was:

UA - 163

NAU - 128

ASU - 111

TOTAL - 402

Thus, the original intent of identifying factors based on ethnicity of students within each institution was not realized.

Because of the small number of respondents in each subgroup, the ethnicity of students was combined across the three universities and all groups were combined within universities. The data are therefore grouped by ethnicity and by institution. Analysis of responses is based upon a composite sample of students at the three universities.

In order to compare responses between groups, the data was cross-tabulated in two ways:

Augustus S. Cotera is currently serving as Associate to the President, Executive Director of NAYuma. He was Assistant to the President at Northern Arizona University from 1980-1987 and has been a Professor of Geology at Northern Arizona University since 1970. He also served as Professor of Geology at Meadville, Pennsylvania, where he was a Professor at Allegheny College.

1. by ethnicity without regard to university, and
2. by university without regard to ethnicity.

For the readers' information, the survey data has also been cross-tabulated by ethnicity and by university, but because of the small ethnic student sample at each university, this cross tabulation is not presented in this report. It is available upon request.

The response to each of the 80 questions by the students, following these two formats, Ethnicity and University, is shown in the form of histograms, which have been grouped in the appendix according to the headings listed below. In each appendix, the histogram for Ethnicity is shown first and the histogram for University follows on the next page for the reader's convenience in comparing data in each format for each question or set of questions.

Each set of questions grouped in each appendix will be briefly discussed in order to provide the reader with the most salient aspects of the survey.

The appendices are as follows:

APPENDIX B

General Characteristics

Questions 1 - 6

APPENDIX C

High School Preparation

Questions 7 - 17

APPENDIX D

Home Environment

Questions 18 - 38

1. Occupation of Parents
   Questions 18 - 21
2. Family Language, Education, Finances
   Questions 22 - 26
3. Demographics: Students and Parents
   Questions 27 - 32
4. Student Background and Values
   Questions 33 - 38

APPENDIX E

Education prior to entering university

Questions 39 - 43

APPENDIX F

Campus Activities

Questions 44 - 47

APPENDIX G

Financial Aid

Questions 48 - 54

APPENDIX H

Campus Support - Academic & Social

Questions 55 - 65

APPENDIX I

Financial Aid

Questions 66 - 70

APPENDIX J

Personal Attention

Questions 71 - 72

APPENDIX K

Self Concept

Questions 73 - 80

The reader is urged to study the histograms in order to obtain an insight into the variation in response between ethnic groups as well as the response for all students at each of the three universities.

The summary that follows is an attempt to present the major findings and conclusions as interpreted by the author.

APPENDIX A

SURVEY OF FACTORS OF STUDENT ACCESS AND PERSISTENCE IN THE ARIZONA UNIVERSITIES

SURVEY OF FACTORS
OF
STUDENT ACCESS AND PERSISTENCE
IN THE
ARIZONA UNIVERSITIES
ARIZONA STATE UNIVERSITY   NORTHERN ARIZONA UNIVERSITY   UNIVERSITY OF ARIZONA
ARIZONA BOARD OF REGENTS TASK FORCE
ON
EXCELLENCE, EFFICIENCY, AND COMPETITIVENESS
APRIL, 1988

Dear University Student:

The Arizona Board of Regents Task Force on Excellence, Efficiency, and Competitiveness needs your help in our effort to increase the access and persistence of students in the three Arizona universities. You can help us develop a data base and improve the admission, retention, and graduation rates of students at ASU, NAU, and U of A. The information that you can provide will be held in strict confidence. Analysis and reporting of data will be done only in terms of total respondents and no information will be associated with individuals. Your input is vital to the efforts of the universities to improve the success of all students in completion of their degree programs. Thank you for your contribution in these efforts.

Augustus S Cotera
Augustus S. Cotera, Staff
A.B.O.R. - E.E.C. Task Force

In the horizontal block marked COURSE NUMBER just above the heavy blue line on your score sheet, mark the school or college in which you expect to receive your degree.

Arizona State University:
(101) Col. of Architec. & Environ. Design
(102) Col. of Business
(103) Col. of Education
(104) Col. of Engineer. & Applied Science
(105) Col. of Fine Arts
(106) Col. of Law
(107) Col. of Liberal Arts & Sciences
(108) Col. of Nursing
(109) Col. of Public Programs
(110) Schl. of Social Work
(111) Undecided

Northern Arizona University:
(201) Center for Excellence in Education
(202) Col. of Arts and Sciences
(203) Col. of Business Administration
(204) Col. of Creative & Comm. Arts
(205) Col. of Engineering and Tech.
(206) Col. of Social and Behavioral Scs.
(207) Schl. of Forestry
(208) Schl. of Health Professions
(209) Schl. of Hotel and Restaurant Mngmt.
(210) Undecided

University of Arizona:
(301) Col. of Agriculture
(302) Col. of Architecture
College of Arts and Sciences:
(303) Faculty of Fine Arts
(304) Faculty of Humanities
(305) Faculty of Science
(306) Faculty of Soc. & Behav. Science
(309) Col. of Business and Public Admin.
(310) Col. of Education
(311) Col. of Engineering and Mines
(312) Col. of Law
(313) Col. of Medicine
(314) Col. of Nursing
(315) Col. of Pharmacy
(316) Undecided

Using the main body of your scoring sheet, mark your answer for each question, to the best of your knowledge, by completely filling in each circle using the pencil provided. If you change your answer, please erase the previous answer completely. If you have any questions please ask the person administering the survey.

1. Sex: (A) Male (B) Female

2. Your Age: (A) 16-20 (B) 21-25 (C) 26-30 (D) 31-35 (E) 36-40 (F) 41+

3. Ethnicity:
(A) Black (not of Hispanic origin) (C) Hispanic (E) Asian or Pacific Islander
(B) White (not of Hispanic origin) (D) American Indian

4. Marital Status:
(A) Single (C) Separated (E) Widowed
(B) Married (D) Divorced

5. Classification:
(A) Freshman (C) Junior (E) Graduate
(B) Sophomore (D) Senior (F) Don't know

6. How many total semesters have you attended this university (including summer sessions)?
(A) one semester (C) three semesters (E) five semesters
(B) two semesters (D) four semesters (F) six or more sem.

7. Rank in graduating high school class:
(A) top 10% (B) top 25% (C) top 50% (D) below 50% (E) No rank, as received GED (F) Do not know

8. High school cumulative grade point average (A = 4.0, B = 3.0, C = 2.0, D = 1.0):
(A) 4.0 - 3.5 (C) 2.9 - 2.5 (E) 1.9 - 1.5 (G) Do not know
(B) 3.4 - 3.0 (D) 2.4 - 2.0 (F) 1.4 - 1.0

9. Based on your high school preparation, in which skill area were you least prepared for college courses?
(A) writing (B) reading (C) math

10. Based on your high school preparation, in which area were you least prepared for college courses?
(A) classroom note taking (B) participating in discussions (C) asking questions
(D) outlining & summarizing written material

11. Estimate the number of students in your high school (size range):
(A) 0 to 500 students (C) 1000 to 1500 students (E) more than 2000 students
(B) 500 to 1000 students (D) 1500 to 2000 students

12. Describe the minority student enrollment of your high school.
(A) Few minority (B) Many minority (C) Mostly minority

13. What was your program major in high school?
(A) Academic (college preparatory) (B) Vocational (job preparatory) (C) Other (D) Not applicable

14. In which state did you graduate (or receive the GED)?
(A) Arizona (C) California (E) Colorado (G) Other
(B) New Mexico (D) Texas (F) Utah

15. What was the most influential factor in your attaining a high school diploma?
(A) family (C) counselor (E) interest in a future career
(B) friends (D) teacher (F) interest in making money

16. While you were in high school, did you participate in any pre-college programs?
(A) Yes (B) No

17. Prior to attending this university did you participate in a "Summer Bridge" (orientation, advisement, etc.) program?
(A) Yes (B) No

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Please note: Questions 18 and 19 pertain to the occupation of your father. Select the most appropriate occupation from either set of answers. If the occupation is not found in question 18, mark G (none of the above) and move on to the set of occupations in question 19. If the occupation is included in the first set of choices (question 18), mark (G) none of the above in question 19.

18. Please select the occupation which most closely fits the employment of your father.
(A) Executive (administrator, manager, other)
(B) Professional (doctor, lawyer, teacher, nurse, other)
(C) Technician (electrician, laboratory, plumber, other)
(D) Sales and service occupations (retail, hotel, restaurant, other)
(E) Clerical (secretary, bookkeeper, file clerk, other)
(F) Homemaker
(G) None of the above

19. Please select the occupation which most closely fits the employment of your father.
(A) Farming, forestry and fishing
(B) Construction and production (assembly, building, manufacturing, other)
(C) Machine operators
(D) Transportation and material moving
(E) Handlers, cleaners, helpers and laborers
(F) Unemployed
(G) None of the above

As in questions 18 and 19 above, questions 20 and 21 pertain to the occupation of your mother. Follow the same procedure as you did above.

20. Please select the occupation which most closely fits the employment of your mother.
(A) Executive (administrator, manager, other)
(B) Professional (doctor, lawyer, teacher, nurse, other)
(C) Technician (electrician, laboratory, plumber, other)
(D) Sales and service occupations (retail, hotel, restaurant, other)
(E) Clerical (secretary, bookkeeper, file clerk, other)
(F) Homemaker
(G) None of the above

21. Please select the occupation which most closely fits the employment of your mother.
(A) Farming, forestry and fishing
(B) Construction and production (assembly, building, manufacturing, other)
(C) Machine operators
(D) Transportation and material moving
(E) Handlers, cleaners, helpers and laborers
(F) Unemployed
(G) None of the above

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22. What language or languages were used by you and your family in your home?
(A) English exclusively
(B) Spanish and English
(C) Spanish exclusively
(D) American Indian and English
(E) American Indian exclusively
(F) Other

23. What is the highest level of schooling or educational programs completed by your father.
(A) Grades 1 to 8
(B) Grades 9 to 11
(C) High School Graduate
(D) Associate Degree
(E) Bachelors Degree
(F) Masters, Doctorate

24. What is the highest level of schooling or educational programs completed by your mother.
(A) Grades 1 to 8
(B) Grades 9 to 11
(C) High School Graduate
(D) Associate Degree
(E) Bachelors Degree
(F) Masters, Doctorate

25. If you are financially dependent upon your parents for your education costs, please indicate their income last year.
(A) Less than $10,000
(B) $10,000 - $20,000
(C) $20,000 - $30,000
(D) $30,000 - $50,000
(E) $50,000 - $75,000
(F) $75,000 & over
(G) don't know

26. If you are not dependent upon your parents, please indicate your total personal earned income last year.
(A) Less than $1,000
(B) $1,000 - $2,000
(C) $2,000 - $3,000
(D) $3,000 - $5,000
(E) $5,000 - $10,000
(F) $10,000 - $25,000
(G) more than $20,000

27. In what kind of locality have you lived most of your life?
(A) Rural
(B) Suburban
(C) Urban

28. In which state did you live most of your life to age 18?
(A) Arizona
(B) New Mexico
(C) California
(D) Texas
(E) Colorado
(F) Utah
(G) other

29. In which state was your father born?
(A) Arizona
(B) New Mexico
(C) California
(D) Texas
(E) Colorado
(F) Utah
(G) other

30. In which country or continent was your father born?
(A) United States
(B) Canada
(C) Mexico
(D) Central/South America
(E) Europe
(F) Asia
(G) Africa

31. In which state was your mother born?
(A) Arizona
(B) New Mexico
(C) California
(D) Texas
(E) Colorado
(F) Utah
(G) other

32. In which country or continent was your mother born?
(A) United States
(B) Canada
(C) Mexico
(D) Central/South America
(E) Europe
(F) Asia
(G) Africa

33. With whom did you live most of the time until age 18?
(A) Both natural parents
(B) Mother and stepfather
(C) Mother only
(D) Father and stepmother
(E) Father only
(F) Grandparent(s)
(G) Other

34. Where are you living during this academic year?
(A) On campus housing
(B) Off campus housing
(C) Family home
(D) Other

35. Who was the most influential in your decision to attend college/university?
(A) Family member
(B) Friend
(C) Teacher
(D) Counselor
(E) Self
(F) Other

36. What was the most influential factor in your decision to attend this university?
(A) Advice from one of the above people
(B) Desired academic program
(C) Availability of financial aid
(D) Reputation of social life
(E) Location & environment of the university
(F) Quality of instruction
(G) Other

37. How important do you consider a college degree will be in your life?
(A) Not very important
(B) Somewhat important
(C) Very important

38. What is your most important reason for seeking a college degree?
(A) Make more money
(B) Attain higher social standing
(C) Obtain a more challenging career
(D) Become an educated person
(E) Other

39. Did you attend another college or university prior to enrolling at this university?
(A) Yes
(B) No

40. If you answered YES to Question 39, what kind of college or university did you attend? If you answered NO, mark (E).
(A) A Community college in Arizona
(B) A Community college out-of-state
(C) A College or university in Arizona
(D) A College or university out-of-state
(E) Not applicable
(F) Other

41. If you answered YES to question 39, what has been the most difficult problem you have encountered as a result of transferring? If you answered NO, mark (G).
(A) Loss of course credit, previously taken
(B) Lowering of my grade point average
(C) Required to repeat courses previously taken
(D) Lack of prerequisite courses for my major program
(E) University courses are more difficult
(F) Increase financial cost
(G) Not applicable

42. If you transferred from a Community College who or what was the most influential in your decision to continue your education?
(A) Community college counselor
(B) Community college faculty
(C) University counselor
(D) University faculty
(E) Academic program
(F) Other

43. If you answered YES to Question 39, what was the most important consideration that caused you to transfer to this university? If you answered NO, mark (G).
(A) Financial
(B) Geographic
(C) Academic
(D) Social
(E) Family
(F) Other
(G) Not applicable

44. In which university campus activity are you most involved?
(A) clubs
(B) student government
(C) sports
(D) sorority/fraternity
(E) band/orchestra
(F) other
(G) none

45. To what extent do extracurricular activities on campus reflect your interests?
(A) Not at all
(B) Somewhat
(C) Very much

46. To what extent do you participate in the extracurricular activities sponsored by ethnic student organizations?
(A) Hardly ever
(B) Sometimes
(C) Often
(D) Very often

47. In your view, what is the most serious problem or difficulty that minority students, who attend this University, have in completing their degree program?
(A) Financial
(B) Social
(C) Academic
(D) Personal
(E) Other

48. Have you sought assistance from the Office of Financial Aid? (A) Yes (B) No

49. If you answered YES to question 48, in general, how helpful has the Office of Financial Aid been in assisting you to obtain the funding you need for completing your degree program? If you answered NO, mark (D).
(A) Not at all (B) Somewhat (C) Very helpful (D) Not applicable

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The following questions 50, 51, 52, and 53 are concerned with the major source of funding for your college education. Please select only one answer for each question indicating the major source of your college funding in that particular area, if applicable.

50. (A) Parent(s) (C) Personal funds (E) Spouse & Personal (G) None of the above
(B) Spouse (D) Parent(s) & Personal (F) Parent(s), Spouse & Personal

51. (A) Academic Scholarships (C) Veterans Scholarships
(B) Athletic Scholarships (D) None of the above

52. (A) Loans (C) Work Study (E) Grants & Work Study (G) None of the above
(B) Grants (D) Loans & Grants (F) Loans, Grants, & Work Study

53. (A) On campus work (C) Both of above
(B) Off campus work (D) None of the above

************..************

54. How many hours per week do you work to earn money, while attending the University?
(A) 0 hours (C) 6-10 hours (E) 16-20 hours (G) 31+ hours
(B) 1-5 hours (D) 11-15 hours (F) 21-30 hours

55. Do you have an academic advisor (staff or faculty) to assist you in formulating your academic program of study? (A) Yes (B) No

56. How many times each semester do you meet with your advisor?
(A) 0 times (C) 2 times (E) 4 times
(B) 1 time (D) 3 times (F) 5+ times

57. If and when you have personal problems, from whom do you most usually seek help?
(A) Counseling center (C) Faculty or staff advisor (E) Other (G) Not applicable as I have no problems
(B) Family or friends (D) Residence hall advisor (F) No one

58. Have you sought the assistance of the university counseling services?
(A) Yes (B) No

59. If yes, did this counseling help you? (A) Yes (B) No (C) Not applicable

************..************

Questions 60 - 65 concern your academic course work at this university.

60. If or when you have difficulty with your course work, from whom do you usually seek help?
(A) Professor (C) Classmates (E) Other (G) Not applicable, I have no difficulty
(B) Tutorial services (D) Friends (F) No one

61. If you selected answer A (Professor), describe the quality of assistance that your professor provided.
(A) very helpful (B) somewhat helpful (C) not helpful at all (D) did not select answer A

62. In general describe your out of classroom interaction with university personnel (e.g. secretaries, office clerk, food service people).
(A) sarcastic and rude
(B) cold and impersonal
(C) courteous and professional
(D) warm and friendly

63. If you selected answer B (Tutorial services) in question 60 above, which tutorial services did you use the most?
(A) Educational Opportunity Center (ASU)
(B) Specific Academic Department (ASU, NAU, UA)
(C) Learning Assistance Center (NAU)
(D) Minority Student Resource Center (NAU)
(E) Academic Learning Skills Center (UA)
(F) Tutoring Center (ASU, NAU, UA)
(G) Did not select answer B

64. In general, describe the classroom interaction of your professors with you.
(A) sarcastic and rude
(B) cold and impersonal
(C) courteous and professional
(D) warm and friendly

65. In general, how often do you interact academically with your professors outside the classroom?
(A) often
(B) occasionally
(C) seldom
(D) never

************...************

66. Have you sought the assistance of the career/placement services?
(A) Yes
(B) No

67. If you answered YES to Question 66, which service did you use most? If you answered NO, mark (F).
(A) Employment/placement
(B) Career information
(C) Interviewing skills
(D) Letter and resume writing
(E) Other
(F) Not applicable

68. If you do not expect to return to this university next semester, why not?
(A) Graduating
(B) Financial
(C) Transferring
(D) Personal
(E) Undecided
(F) Not applicable because I plan to return

69. What is the most critical reason that could prevent you from returning to this university to complete your degree?
(A) Academic difficulty
(B) Change in program of study
(C) Personal problems
(D) Financial problems
(E) Other
(F) Not applicable because I plan to return

70. If you intend to pursue graduate studies where do you plan to attend?
(A) ASU
(B) NAU
(C) U/A
(D) Other
(E) Not applicable

71. In general, have university FACULTY with whom you have had direct contact given you adequate personal attention and consideration of your requirements as a university student?
(A) Always
(B) Most often
(C) Sometimes
(D) Not often
(E) Never
(F) Not applicable as I have not had any contact

72. In general have university STAFF with whom you have had direct contact, given you adequate personal attention and consideration of your requirements as a university student?
(A) Always
(B) Most often
(C) Sometimes
(D) Not often
(E) Never
(F) Not applicable as I have not had any contact

************...************

If you were compared to most other students at this University, how would you be rated on questions 73-80 by an unbiased observer?

73. Popularity with members of the opposite sex on this campus?
(A) high (B) above average (C) average (D) below average

74. The number of friends that you have at this university?
(A) high (B) above average (C) average (D) below average

75. Professors' evaluation of you?
(A) high (B) above average (C) average (D) below average

76. Closeness to your family?
(A) high (B) above average (C) average (D) below average

77. High school teachers' evaluations of you?
(A) high (B) above average (C) average (D) below average

78. Current physical health?
(A) above average (B) average (C) below average

79. Self-confidence in social settings?
(A) high (B) above average (C) average (D) below average

80. Leadership ability among your peers?
(A) high (B) above average (C) average (D) below average

THANK YOU FOR YOUR HELP!

APPENDIX B

GENERAL CHARACTERISTICS

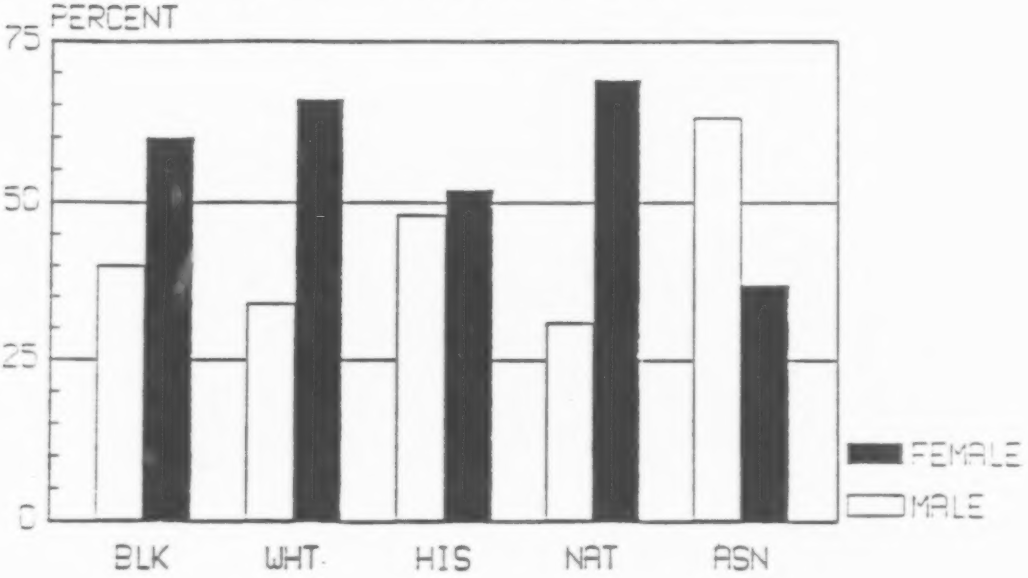
1. As shown in Variable 01 (Var 01), more females than males responded to the survey, except in the Asian group where the ratio was reversed.

2. In Var 02, the predominant age group is 16 - 25 for all ethnic groups, but with unique variations for each group.

3. The largest total response (Var 03), was from the UA, with NAU second (but with the largest Native American group), and ASU third.

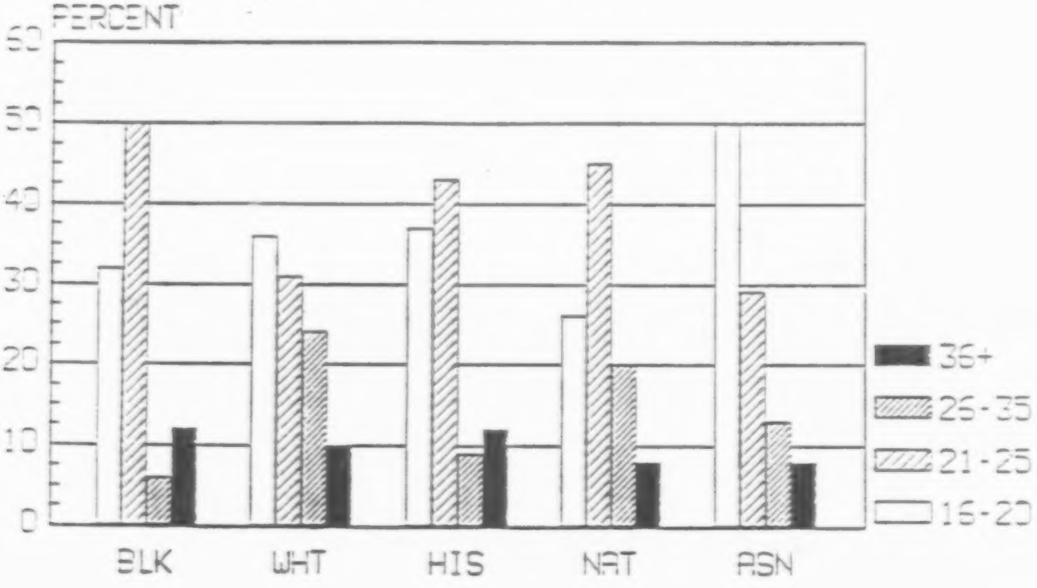
4. The largest class of students are seniors (Var 05) and the majority of students are single (Var 04).

VAR 01 - SEX DISTRIBUTION



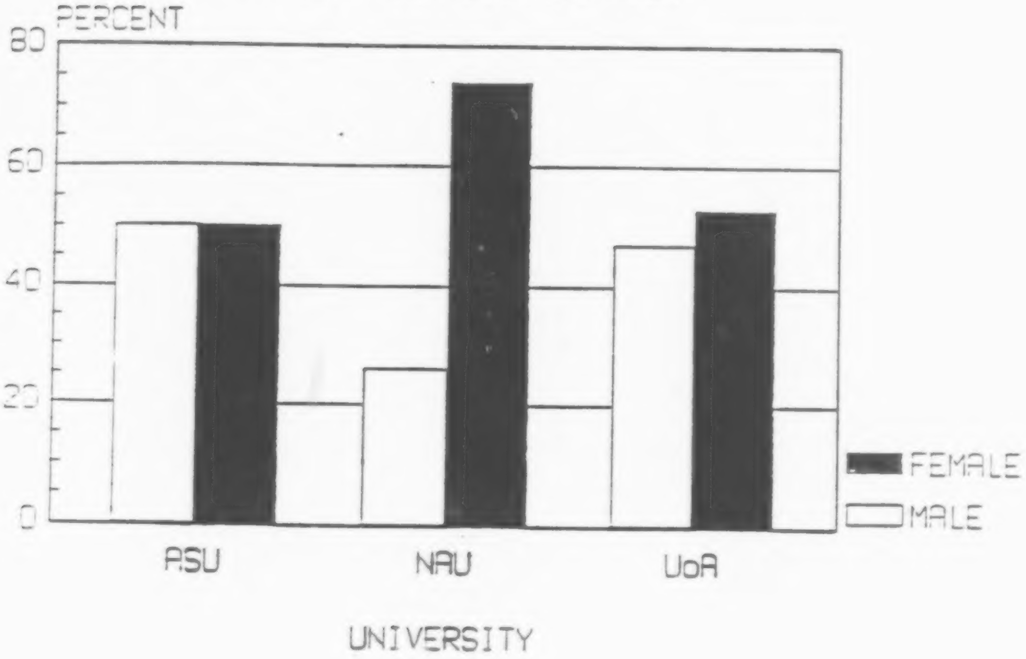
ETHNICITY

VAR 02 - AGE DISTRIBUTION

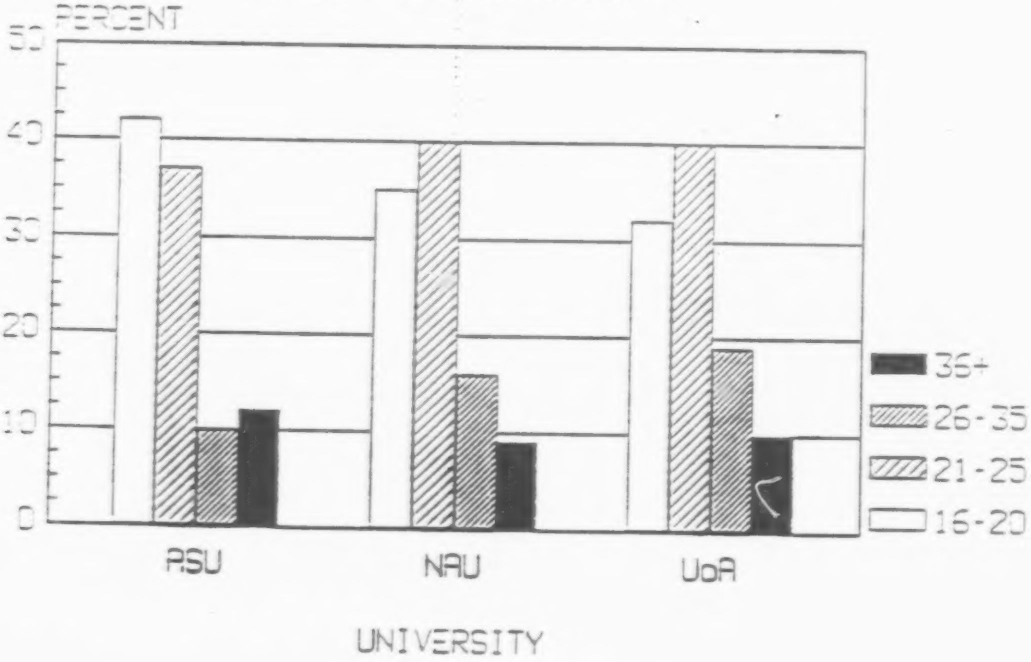


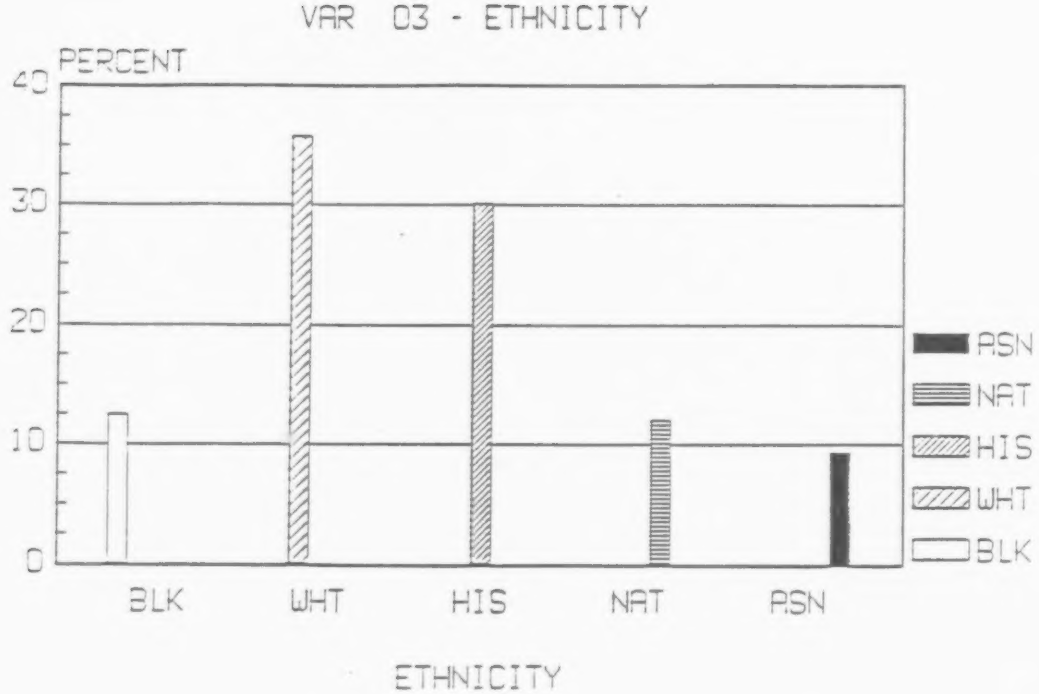
ETHNICITY

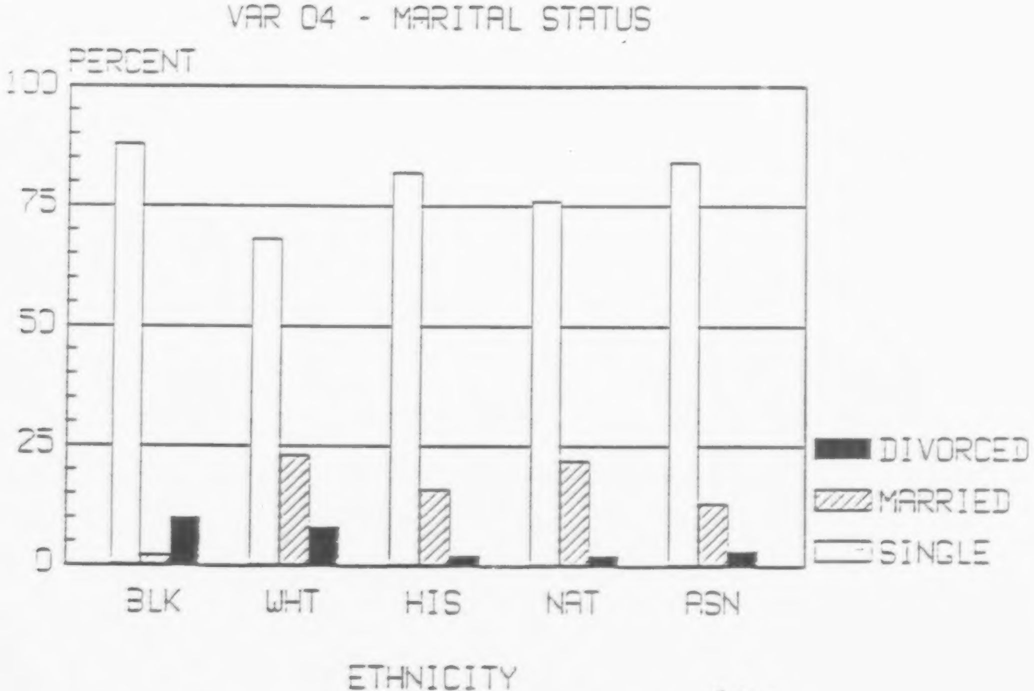
VAR 01 - SEX DISTRIBUTION



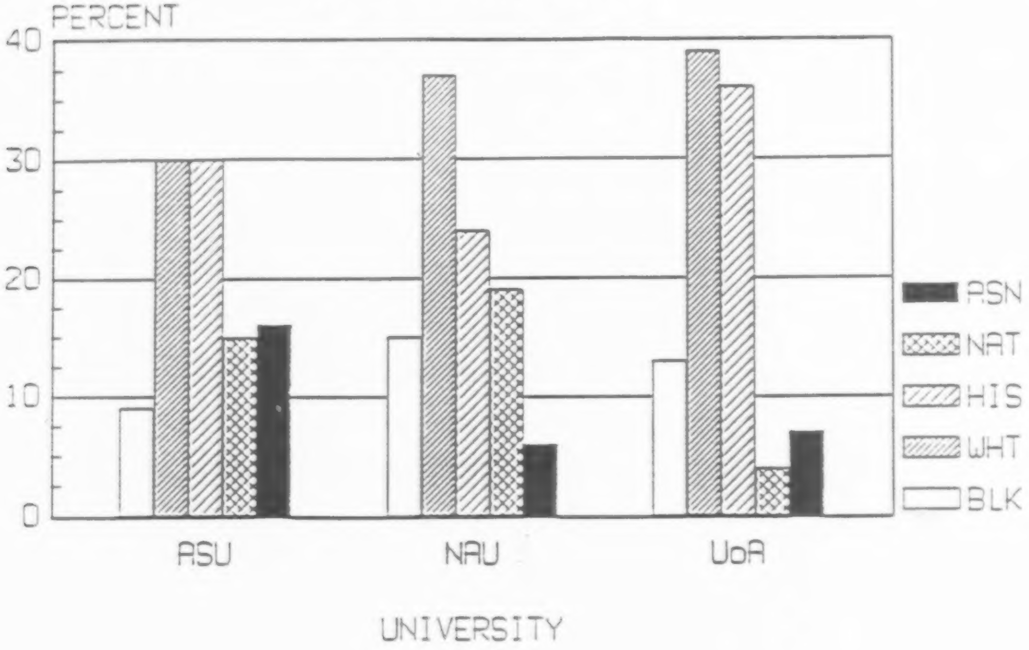
VAR 02 - AGE DISTRIBUTION



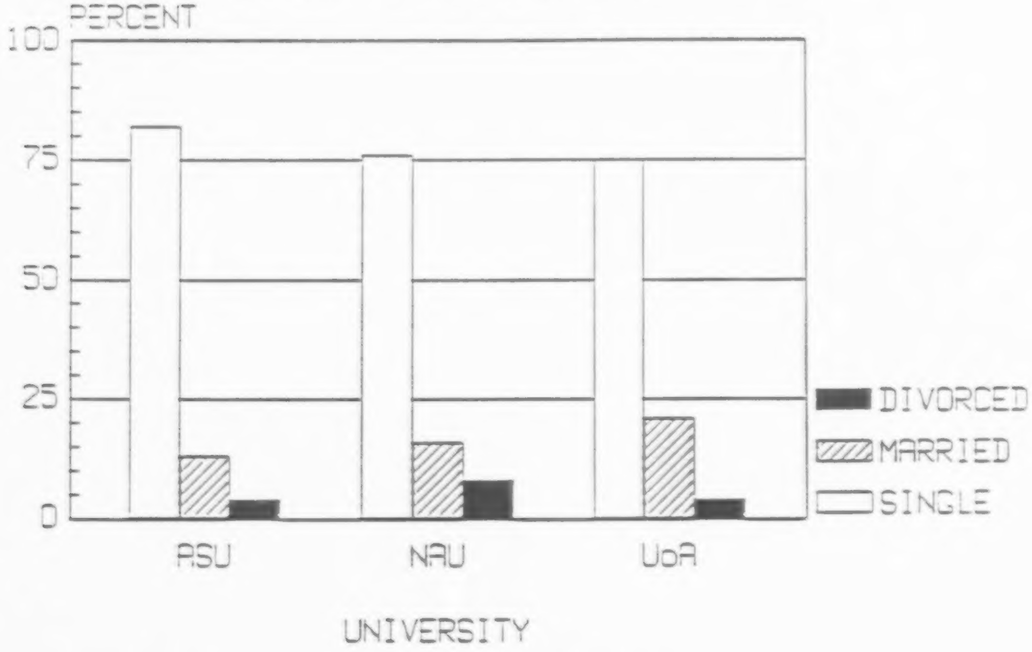

VAR 03 - ETHNICITY
PERCENT
40
30
20
10
0
BLK
WHT
HIS
NAT
ASN
ETHNICITY
ASN
NAT
HIS
WHT
BLK

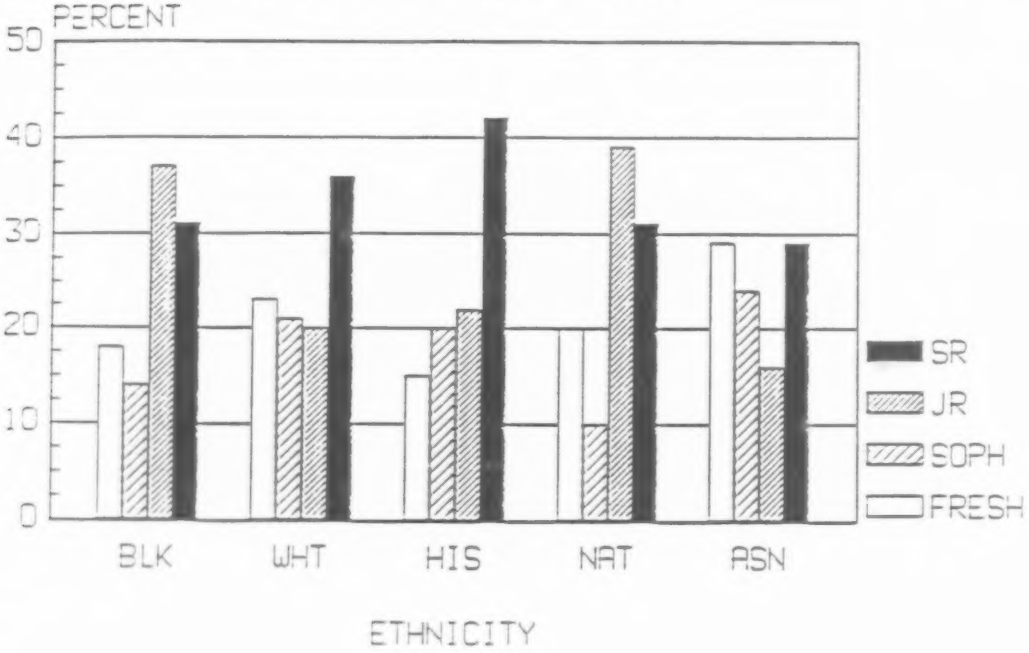

VAR 04 - MARITAL STATUS
PERCENT
100
75
50
25
0
BLK
WHT
HIS
NAT
ASN
ETHNICITY
DIVORCED
MARRIED
SINGLE

VAR 03 - ETHNICITY

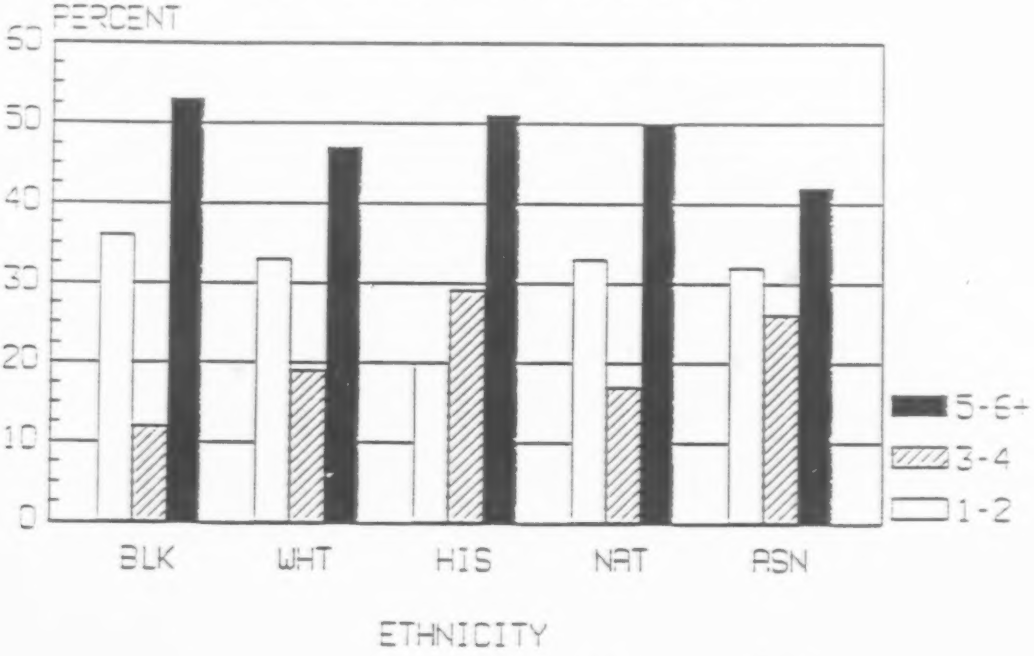


VAR 04 - MARITAL STATUS

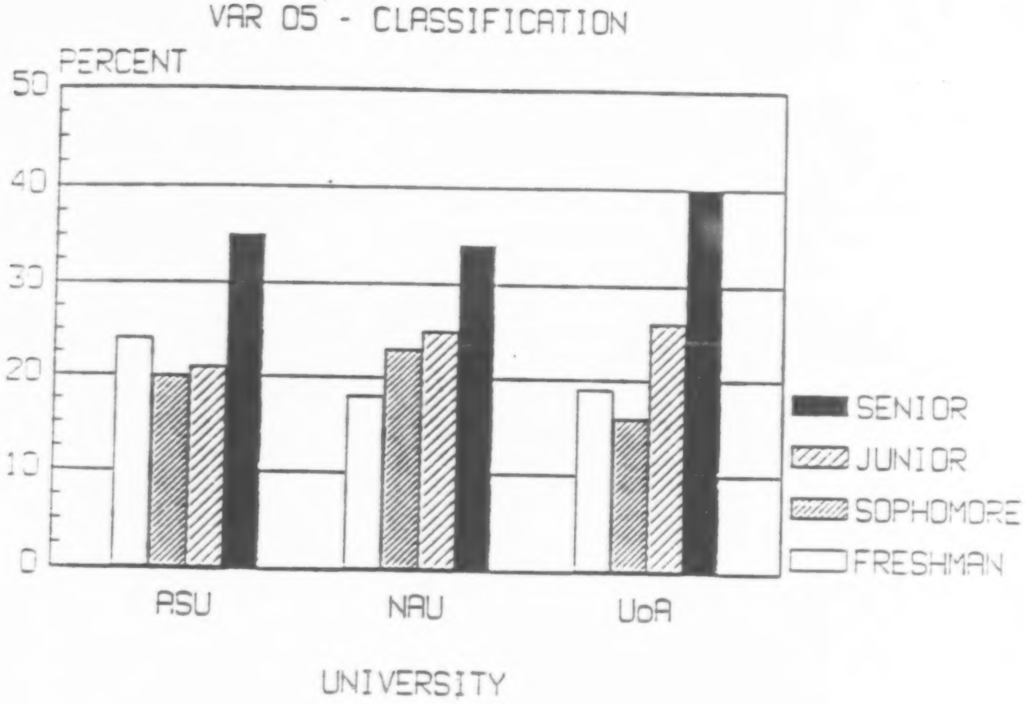


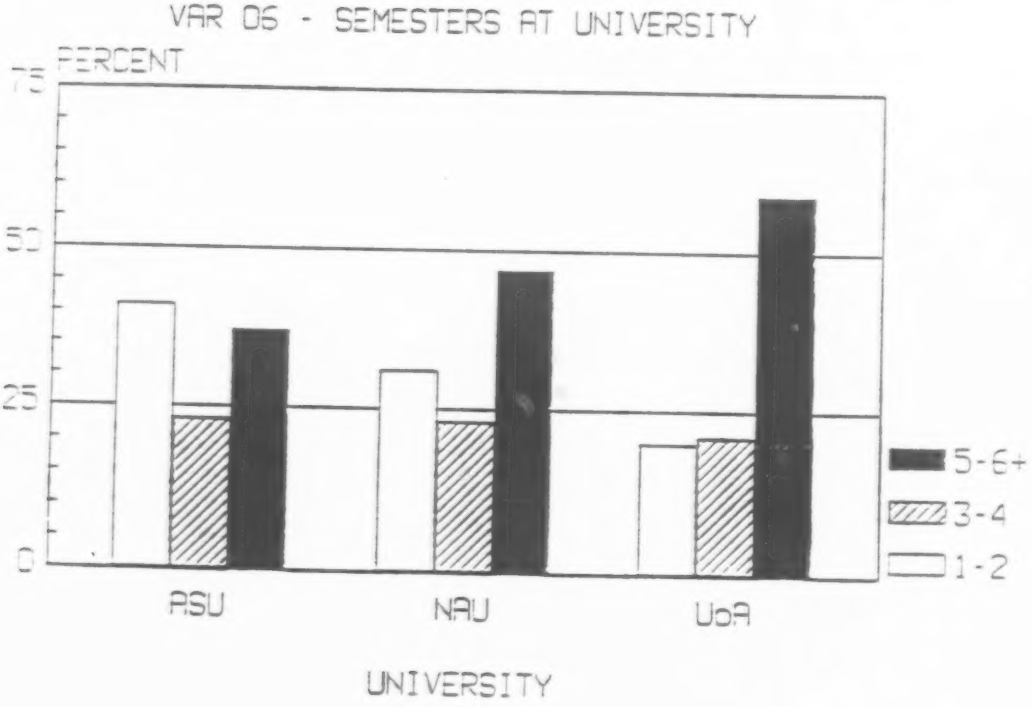


VAR 05 - CLASSIFICATION



VAR 06 - SEMESTERS AT UNIVERSITY


VAR 05 - CLASSIFICATION
PERCENT
50
40
30
20
10
0
SENIOR
JUNIOR
SOPHOMORE
FRESHMAN
ASU
NAU
UoA
UNIVERSITY


VAR 06 - SEMESTERS AT UNIVERSITY
PERCENT
75
50
25
0
5-6+
3-4
1-2
ASU
NAU
UoA
UNIVERSITY

APPENDIX C

HIGH SCHOOL PREPARATION

1. Interestingly, the Hispanic, Native American and Asian groups have the highest percentage of students in the top 10% of their respective graduating class (Var 07).

2. All ethnic groups have comparable High School GPA ranking (Var 08), except for the Asian group with almost one half of the group in the highest category.

3. The weakest skill area (Var 09) for all groups is mathematics.

4. The weakest overall class preparation area by ethnicity and university (Var 10) is outlining and summarizing, but for Native Americans, discussion is weakest and for Blacks and Asians, discussion and note-taking are the weakest.

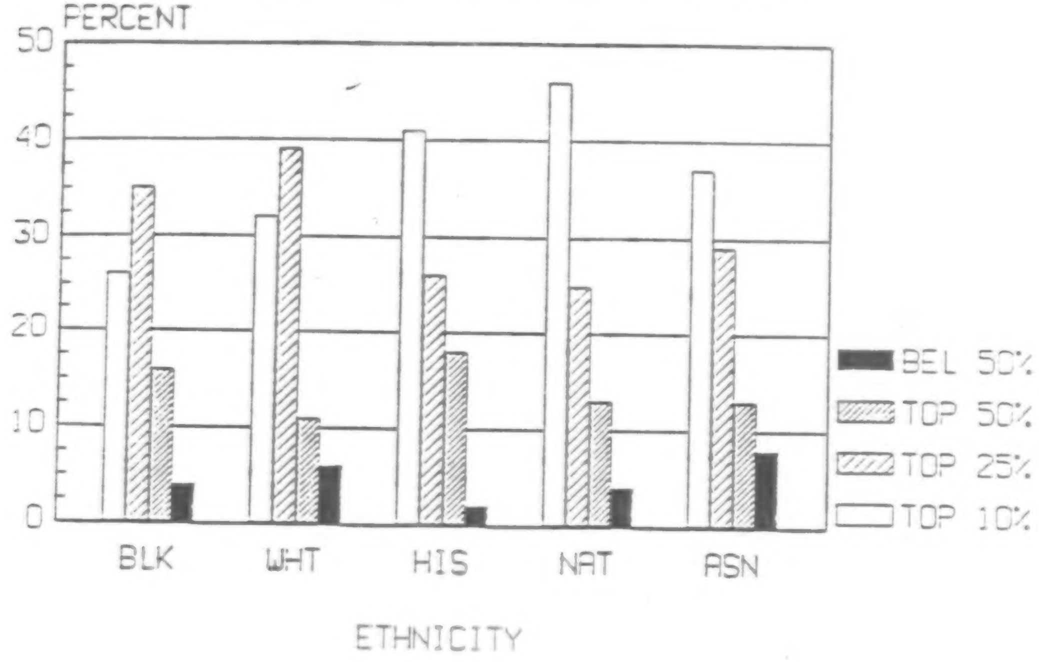
5. Native Americans attend the smallest schools (Var 11), but the representation at the three universities is comparable.

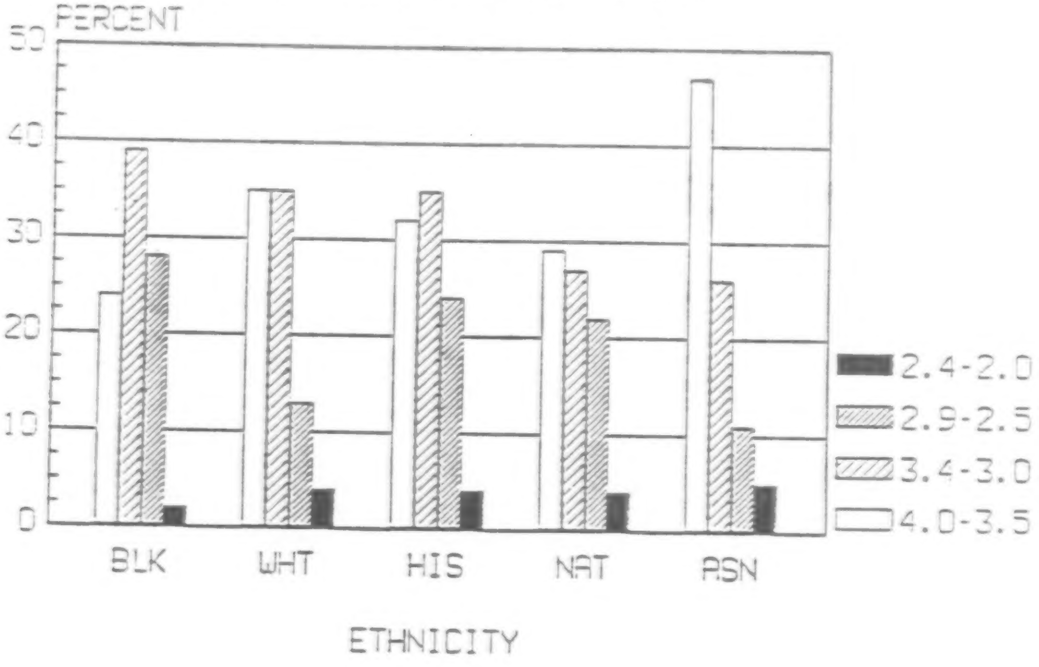
6. The number of minorities in the respective schools (Var 12) shows interesting variations.

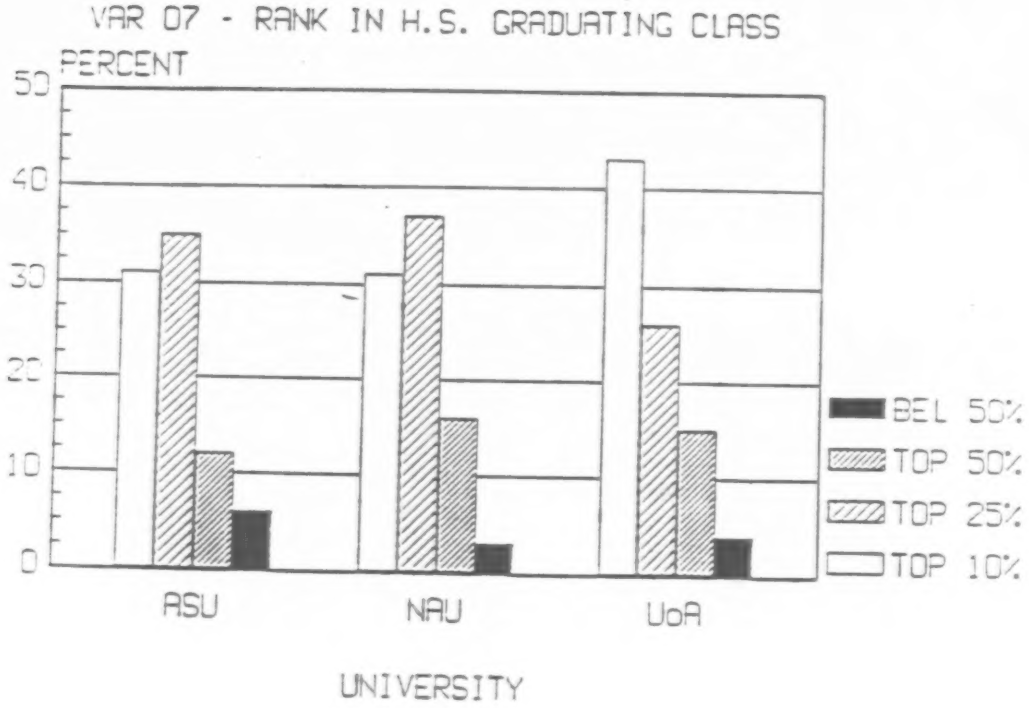
7. Most students surveyed attended high school in Arizona except for about one quarter of the blacks and whites (Var 14).

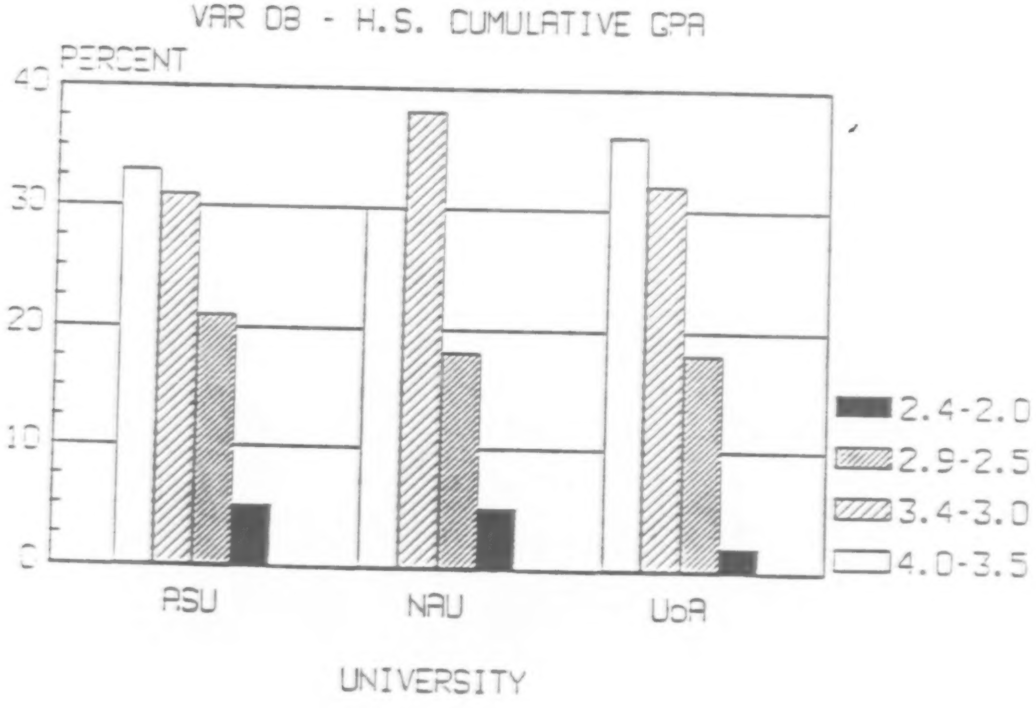
8. Family and personal career goal aspirations are the dominant influences in attaining a high school diploma (Var 15).

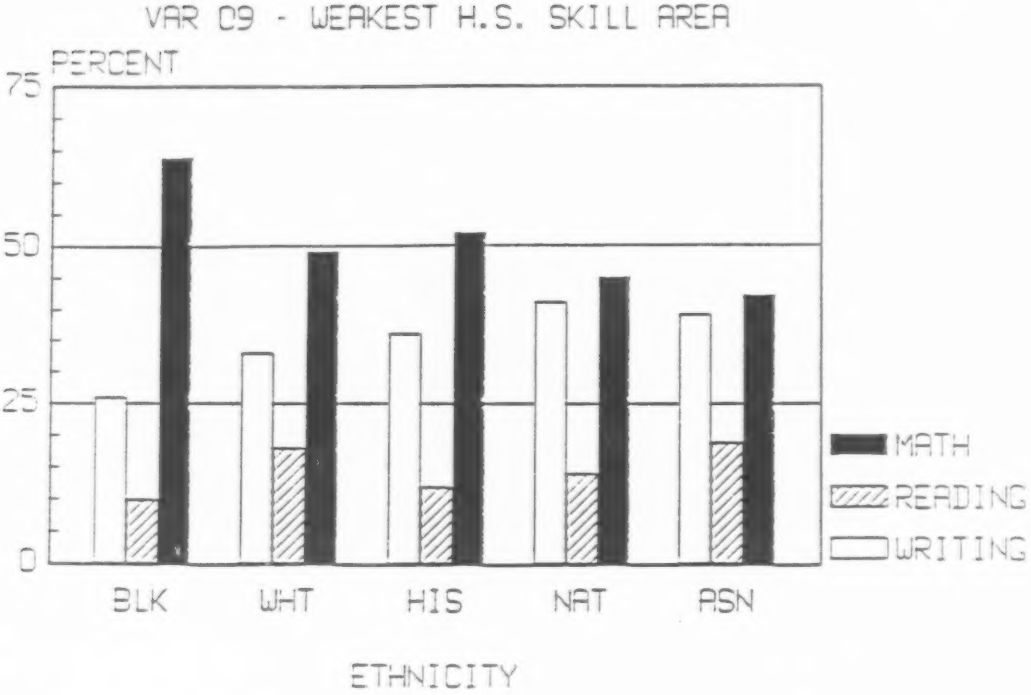
9. Whites and Native Americans participate in Pre-College programs and Hispanics participate in "Bridge" programs (Var 16/17).

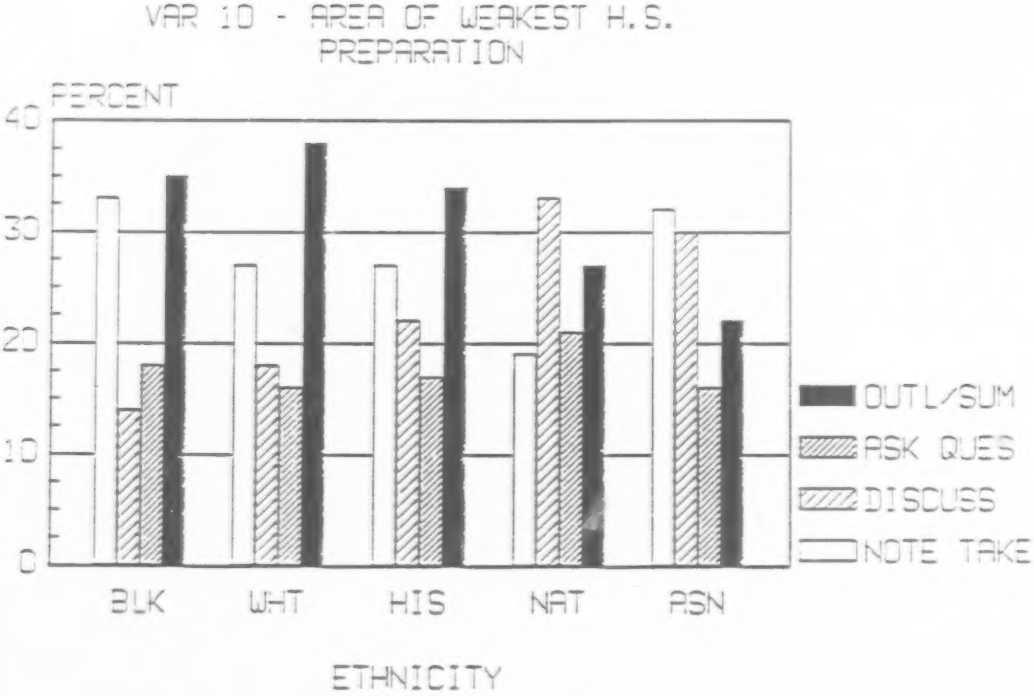

VAR 07 - RANK IN H.S. GRADUATING CLASS

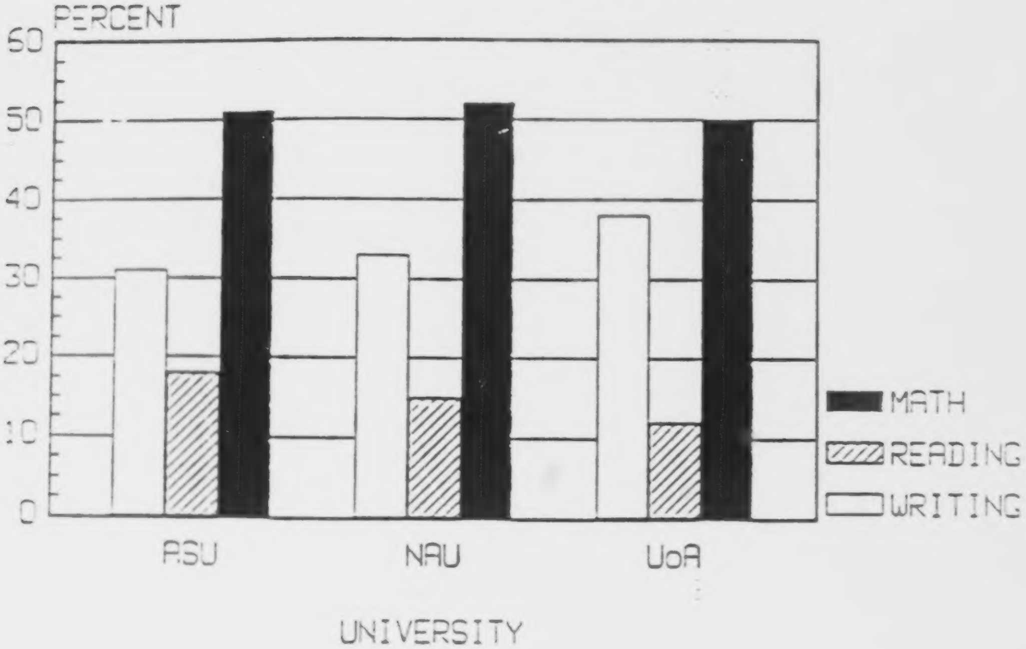

VAR 08 - H.S. CUMULATIVE GPA

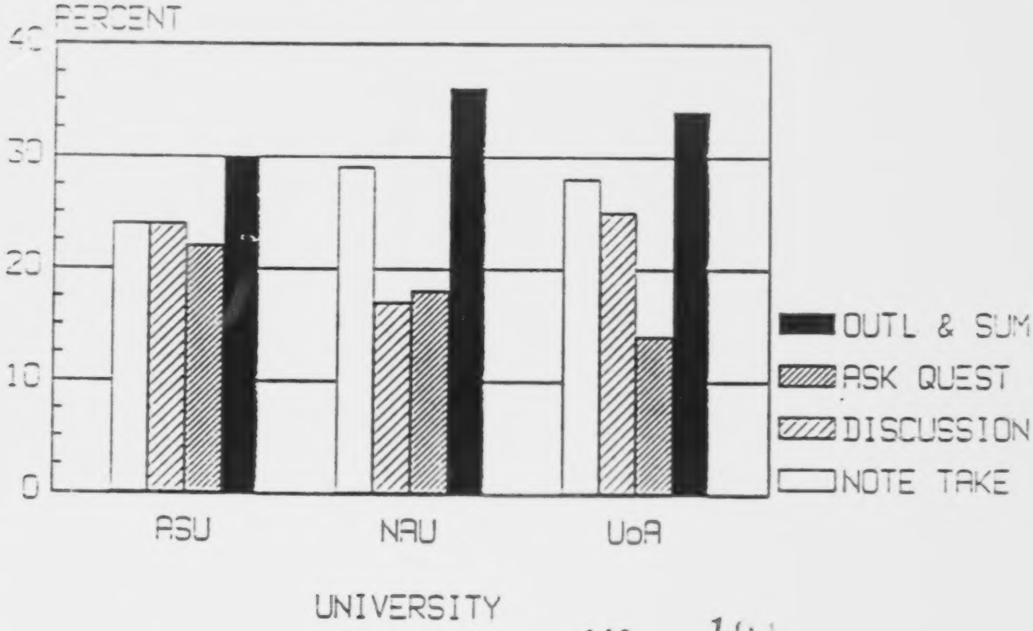

VAR 07 - RANK IN H.S. GRADUATING CLASS
PERCENT
50
40
30
20
10
0
BEL 50%
TOP 50%
TOP 25%
TOP 10%
ASU
NAU
UoA
UNIVERSITY


VAR 08 - H.S. CUMULATIVE GPA
PERCENT
40
30
20
10
0
2.4-2.0
2.9-2.5
3.4-3.0
4.0-3.5
ASU
NAU
UoA
UNIVERSITY

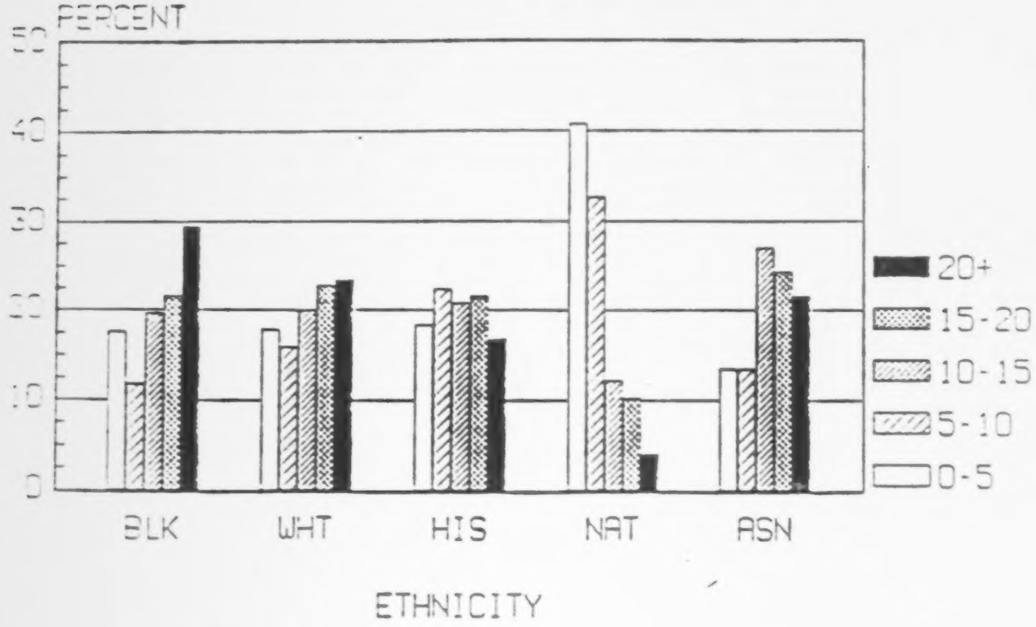

VAR 09 - WEAKEST H.S. SKILL AREA
PERCENT
75
50
25
0
MATH
READING
WRITING
BLK
WHT
HIS
NAT
ASN
ETHNICITY


VAR 10 - AREA OF WEAKEST H.S. PREPARATION
PERCENT
40
30
20
10
0
OUTL/SUM
ASK QUES
DISCUSS
NOTE TAKE
BLK
WHT
HIS
NAT
ASN
ETHNICITY

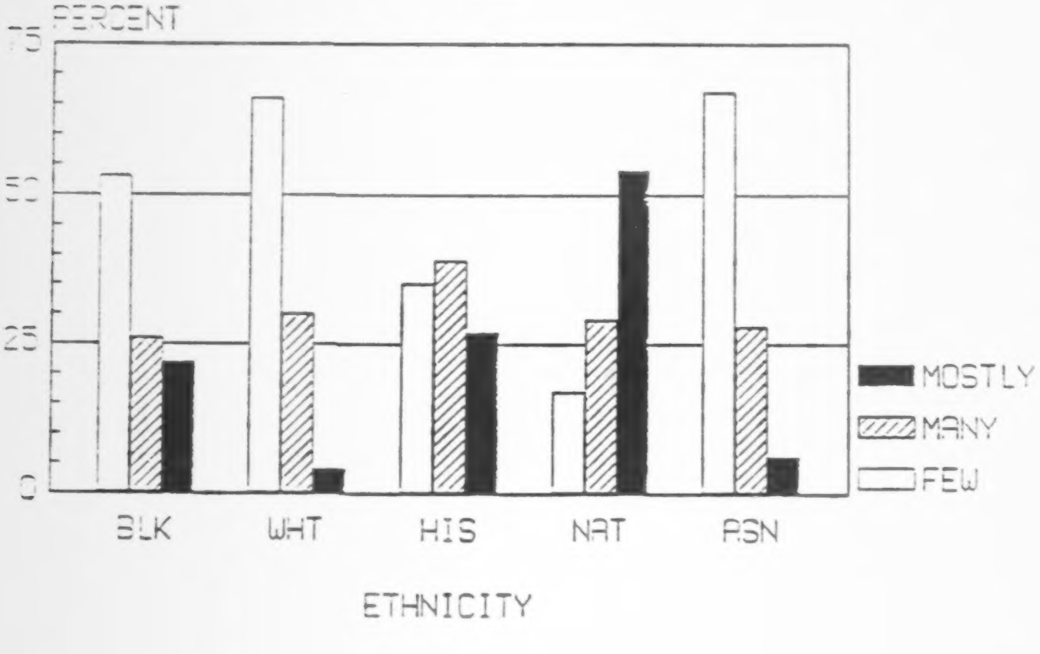

VAR 09 - WEAKEST H.S. SKILL AREA


VAR 10 - AREA OF WEAKEST H.S. PREPARATION

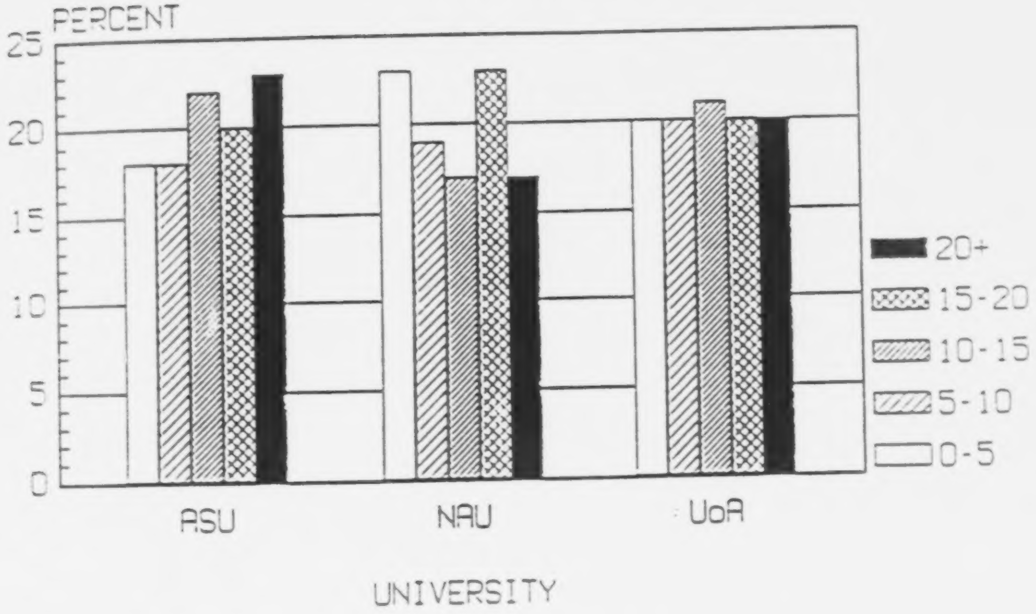
VAR 11 - NUMBER OF STUDENTS IN H.S.
IN HUNDREDS



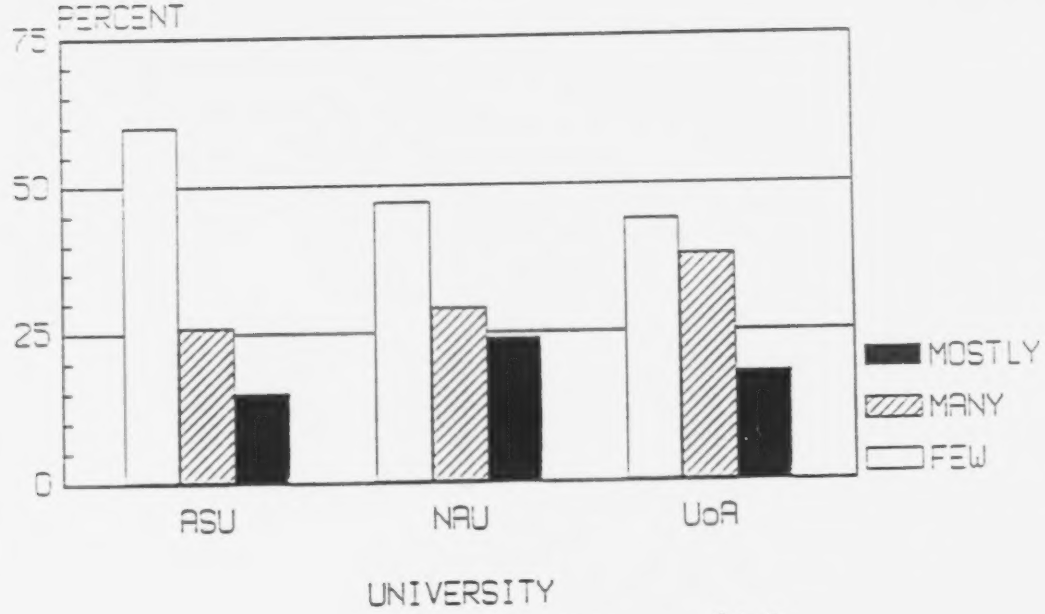
VAR 12 - NUMBER OF MINORITIES IN H.S.
ATTENDED



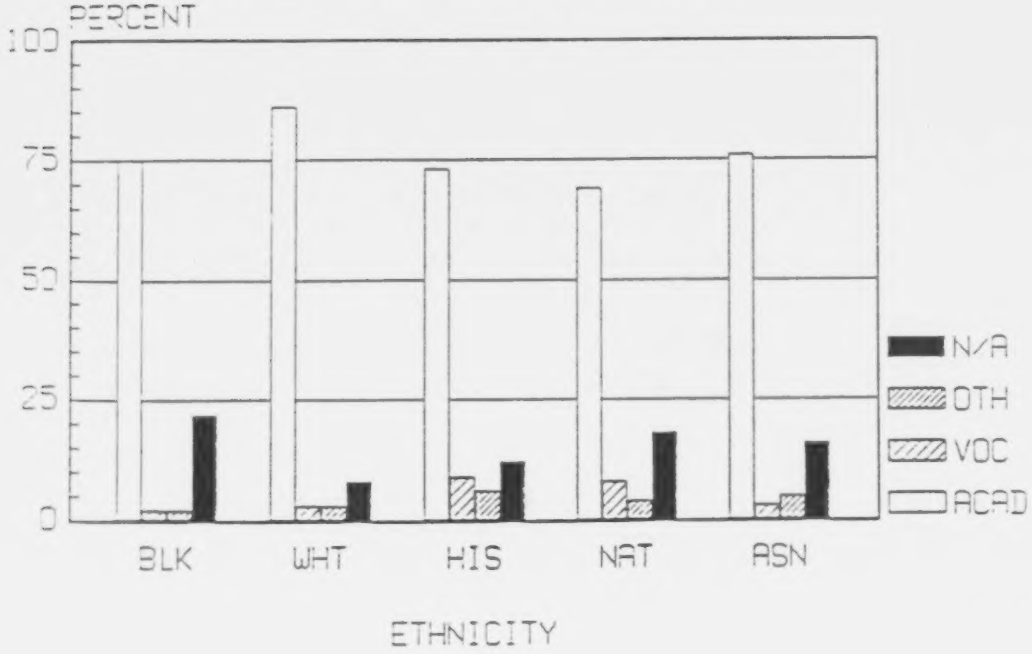
VAR 11 - NUMBER OF STUDENTS IN H.S.
IN HUNDREDS



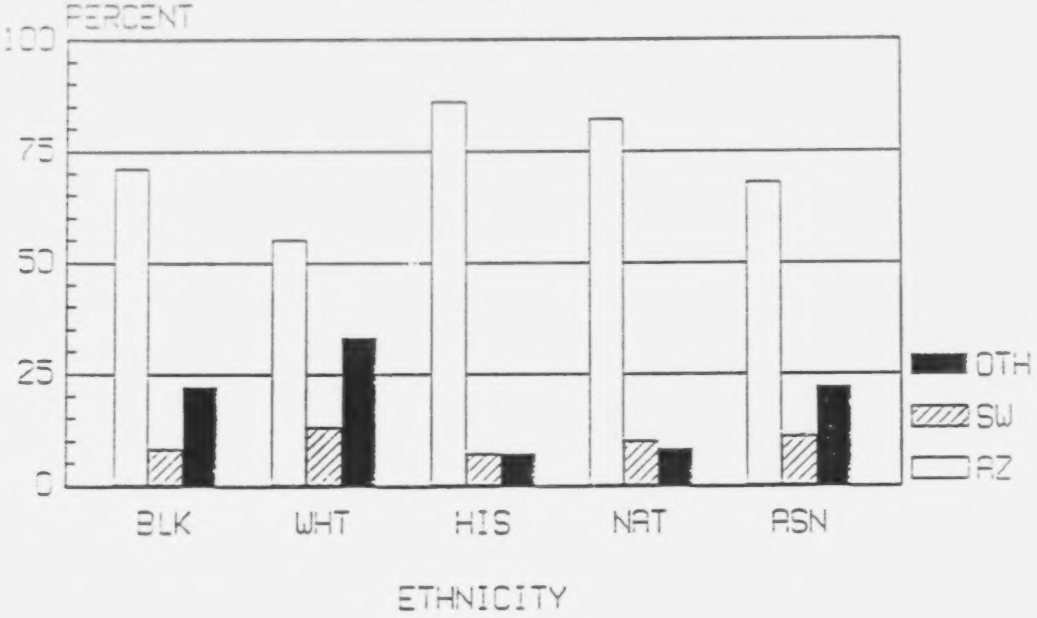
VAR 12 - NUMBER OF MINORITIES IN H.S.
ATTENDED



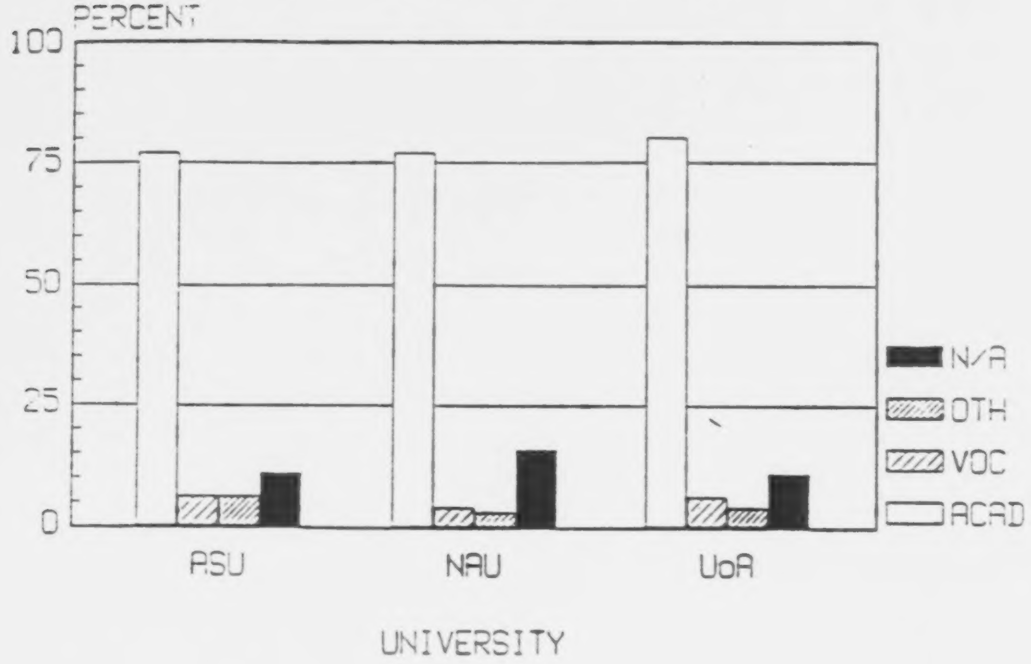
VAR 13 - PROGRAM MAJOR IN H.S.



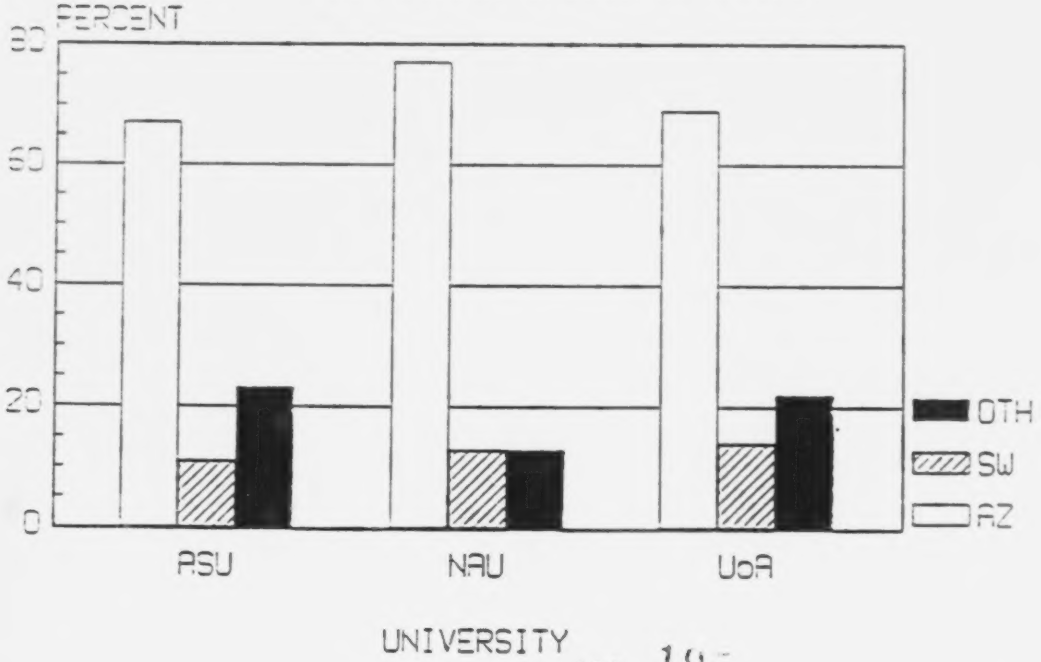
VAR 14 - HIGH SCHOOL ORIGIN BY STATE



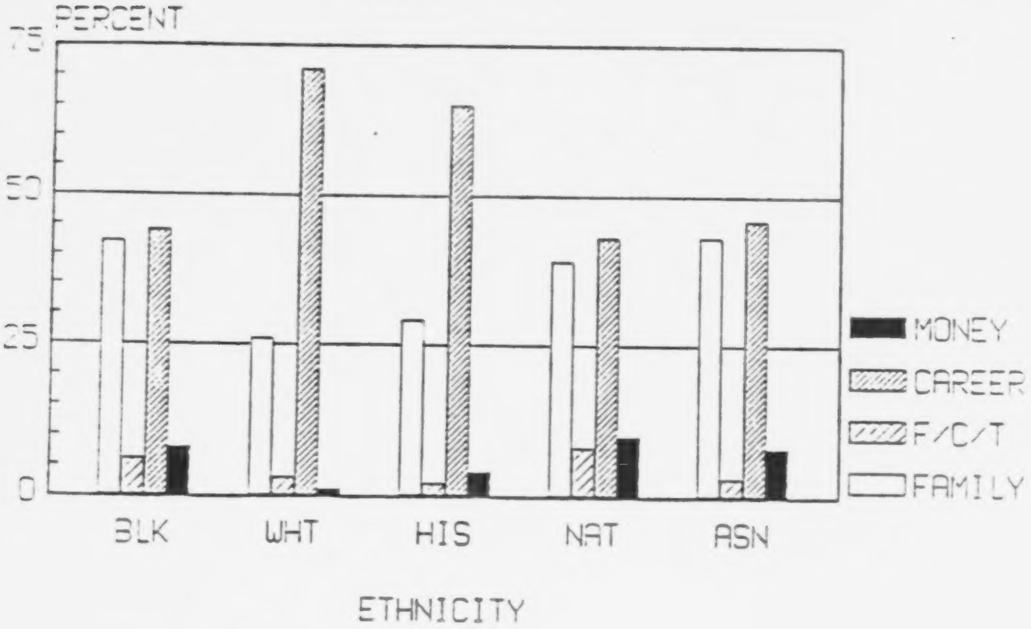
VAR 13 - PROGRAM MAJOR IN H.S.

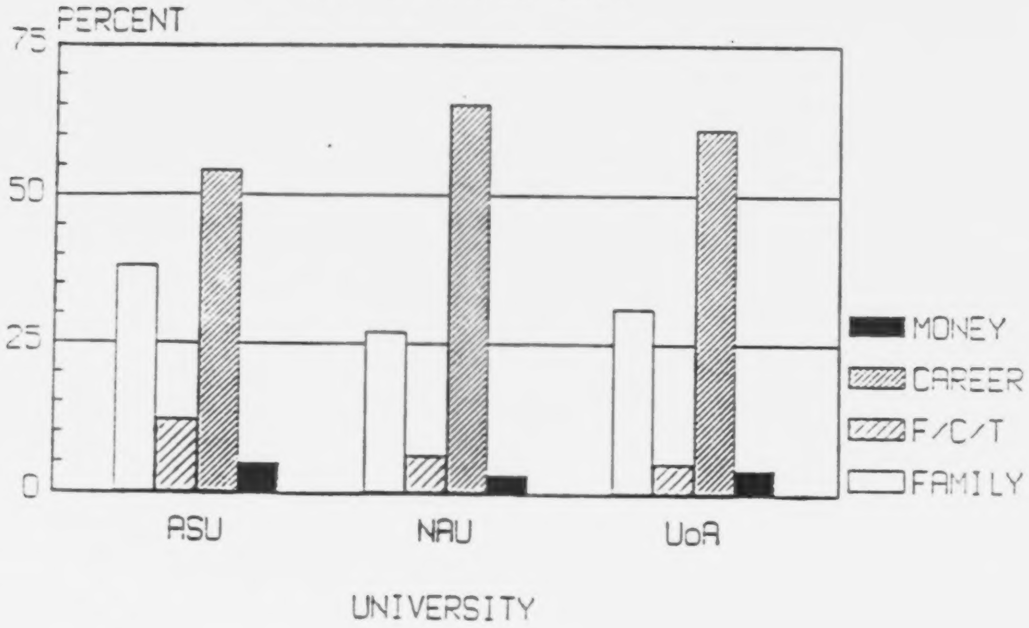


VAR 14 - HIGH SCHOOL ORIGIN BY STATE

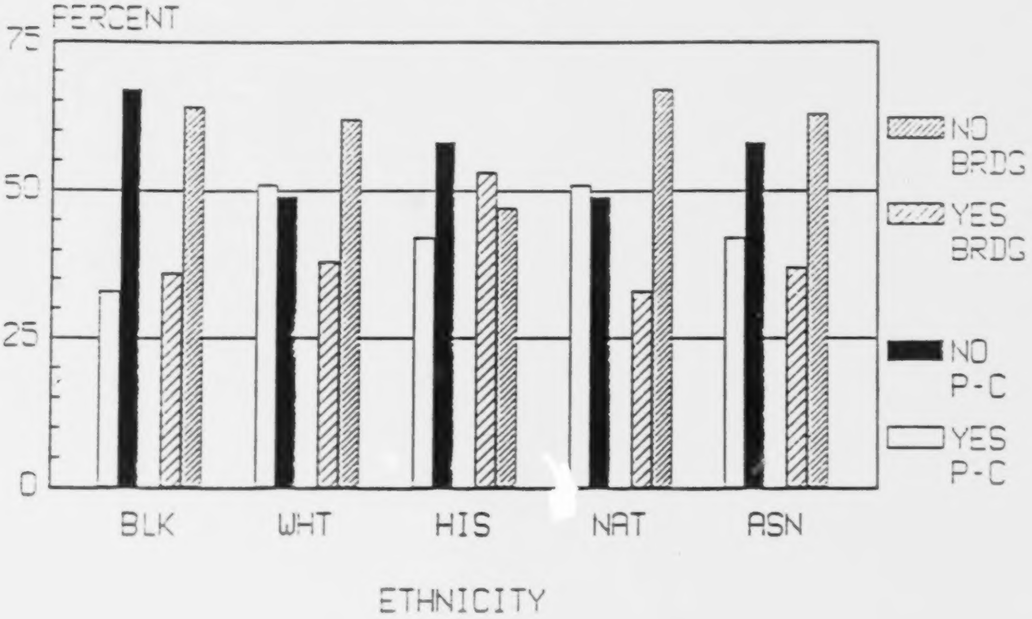


VAR 15 - STRONGEST INFLUENCE TO ATTAIN H.S. DIPLOMA

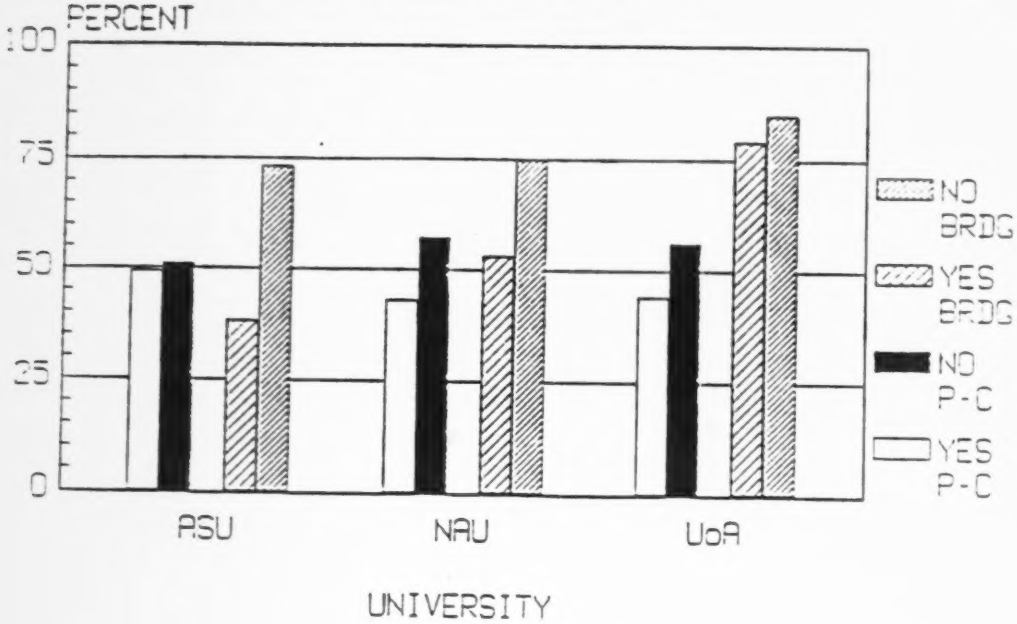



VAR 15 - STRONGEST INFLUENCE TO ATTAIN HIGH SCHOOL DIPLOMA

VAR 16 & 17 - PARTICIPATION: PRE-COLLEGE & BRIDGE PROGRAMS



VAR 16 & 17 - PARTICIPATION: PRE-COLLEGE & BRIDGE PROGRAMS



APPENDIX D

HOME ENVIRONMENT DEMOGRAPHICS

1. The kind of home locality (Var 27) of the students is as expected and the majority of Black, White and Asian students and parents are not native to Arizona, whereas the Hispanics and Native Americans are predominantly native (Var 28, 29, 31). Asian parents are predominantly foreign-born and about one quarter of Hispanic parents come from Mexico (Var 30, 32).

STUDENT BACKGROUND AND VALUES

1. Interestingly, the preponderant majority of students lived with both natural parents until age 18 (Var 33).
2. A large percentage of Hispanic and Asian students live at home (Var 34) and at UA, 60 % of the respondents lived at home.
3. The person most influential in making the decision to attend college (Var 35) was mostly the individual student, closely followed by the family, except in the white group where about 75% of the respondents indicated themselves.
4. The most influential factor in selecting the university being attended was location and environment, followed closely by advice from family and desired academic program (Var 36).
5. The importance of the degree is unquestionable (Var 37) and the reasons for seeking the degree is mainly career aspirations followed closely by the desire to become an educated person (Var 38), except for Blacks who have the highest monetary interest.

OCCUPATION OF PARENTS

1. Occupation of fathers are distributed over all types, but with Executive, Professional and Technical dominant in Variable 18 and Construction dominant in Variable 19. Note the high unemployment among Native Americans.

2. Occupation of mothers is dominant in Homemakers and Clerical in Variable 20.

FAMILY LANGUAGE, EDUCATION AND FINANCES

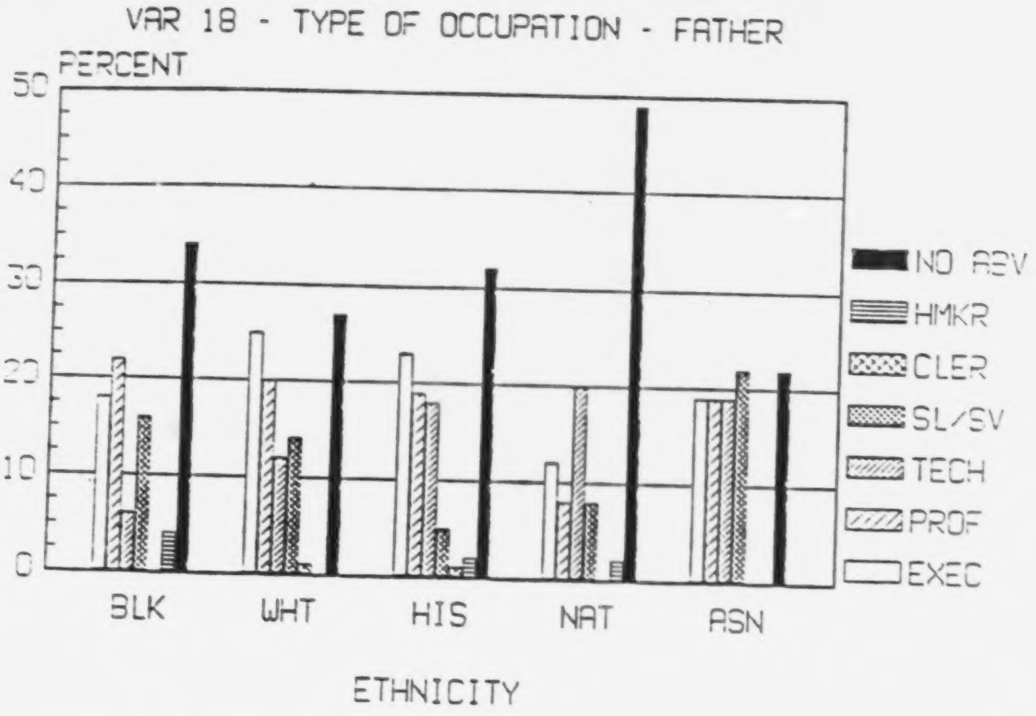
1. As expected, the primary language used in the home, when other than English, is reflected by more than 50% of the Hispanic, Native American and Asian students (Var 22).

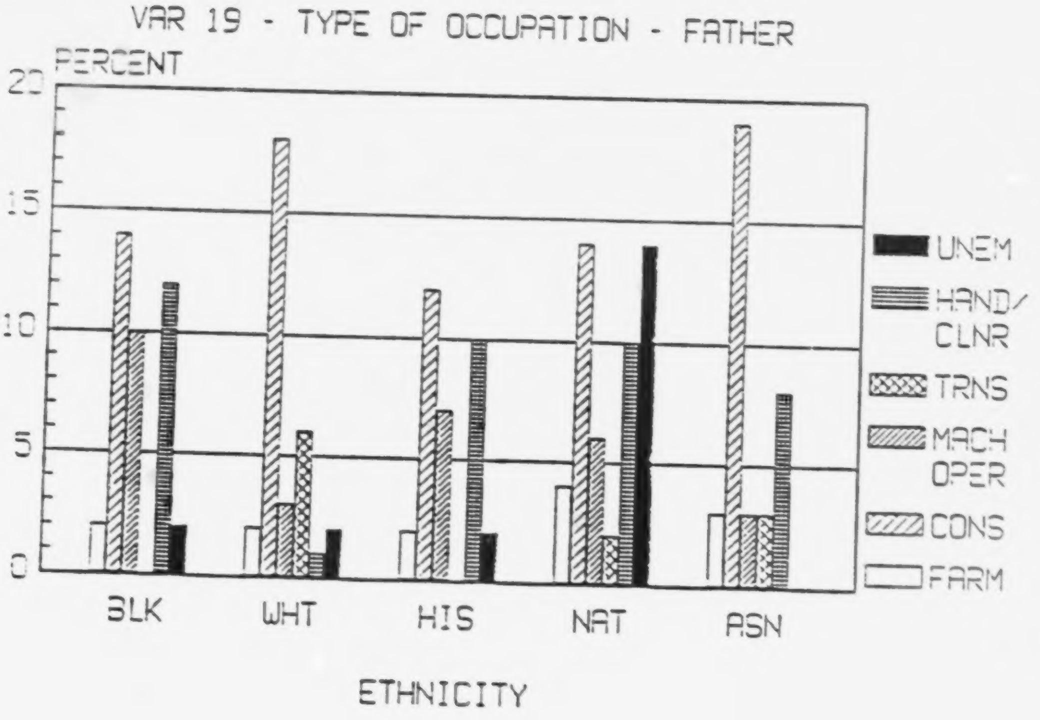
2. The educational level of the father (Var 23) at the post-graduate level is highest among Blacks and Asians, followed closely by Whites, and Asians also have the highest percentage of bachelor degrees. Native American fathers are the least educated of all groups.

3. Among mothers (Var 24), the high school diploma is most common in all groups, with Hispanics predominating.

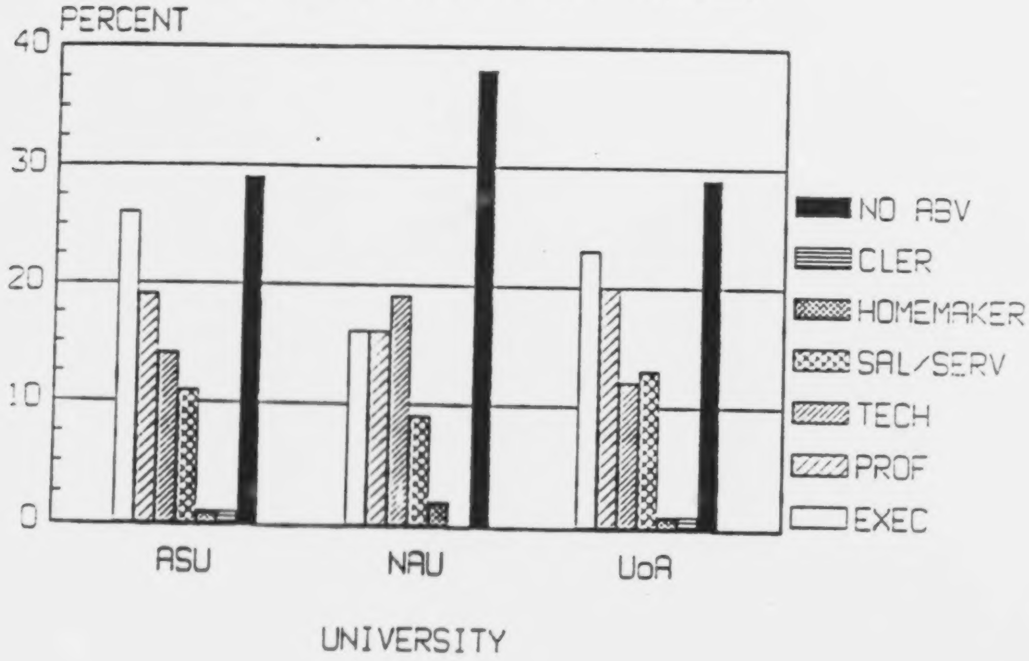
4. Almost one third or more of the students surveyed did not know the income of their parents (Var 25).

5. Personal income of students not dependent upon their parents for support shows interesting variations between the three universities (Var 26). A large proportion of UA students have incomes of less than one thousand dollars followed closely by ASU and least at NAU.

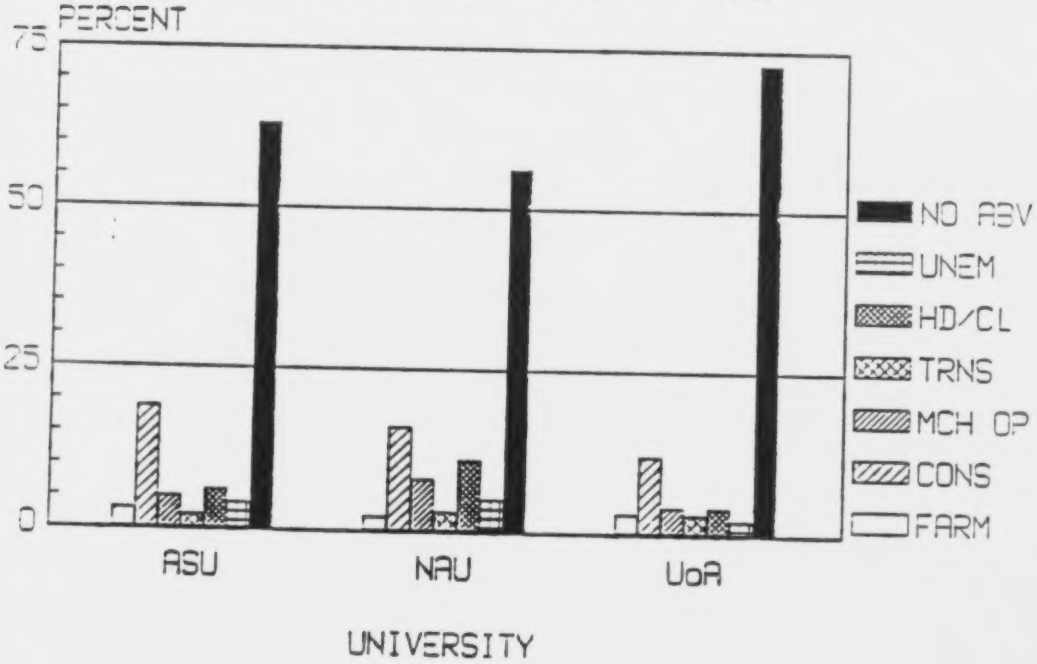

VAR 18 - TYPE OF OCCUPATION - FATHER


VAR 19 - TYPE OF OCCUPATION - FATHER

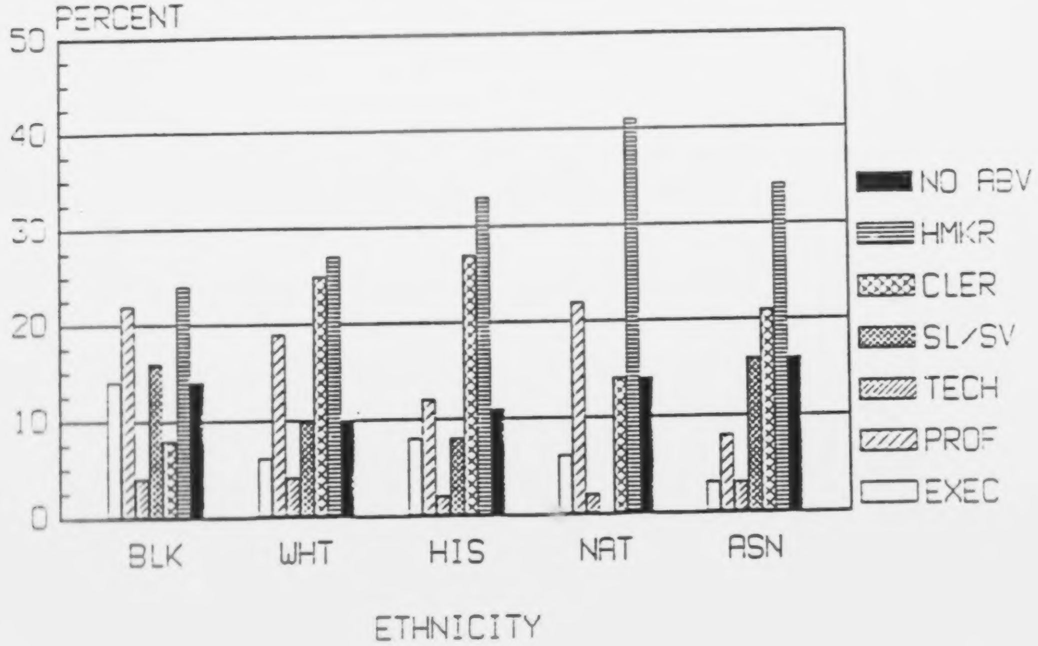
VAR 18 - TYPE OF OCCUPATION - FATHER



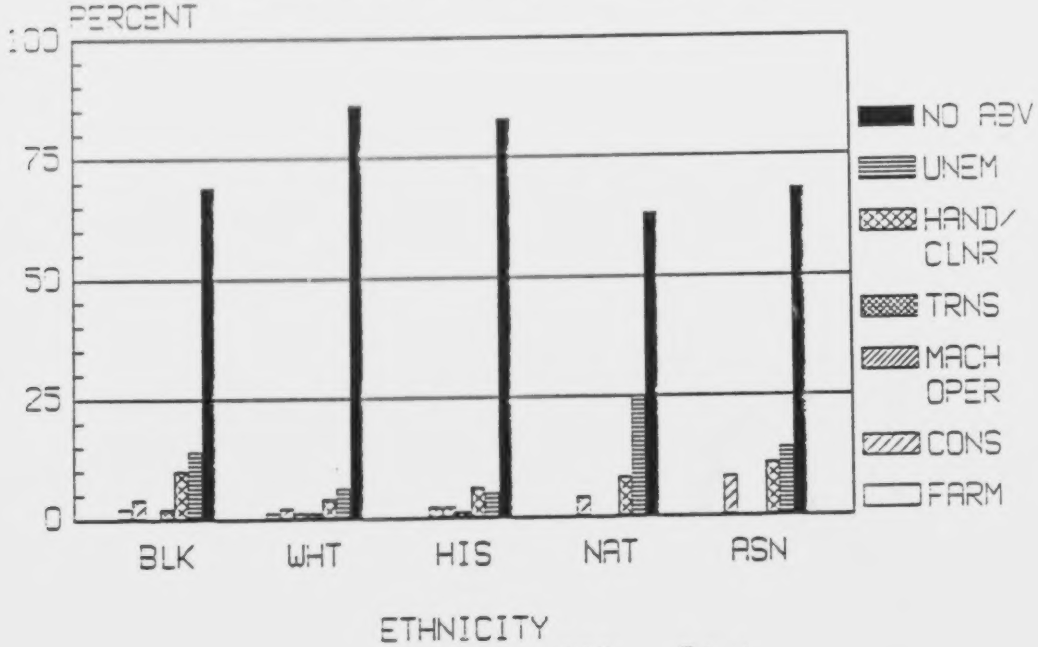
VAR 19 - TYPE OF OCCUPATION - FATHER



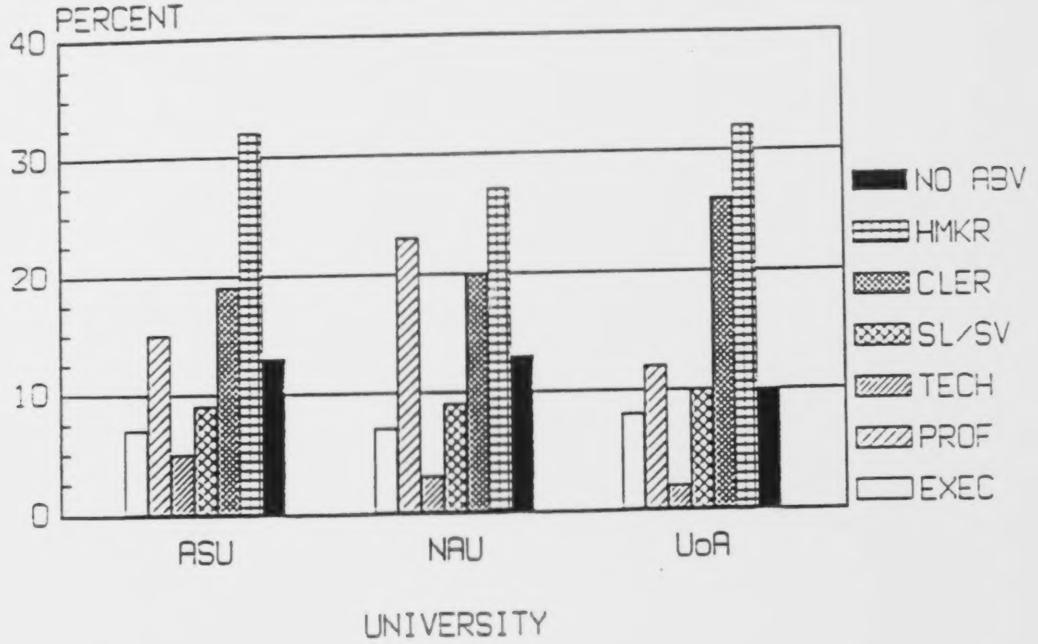
VAR - 20 TYPE OF OCCUPATION - MOTHER



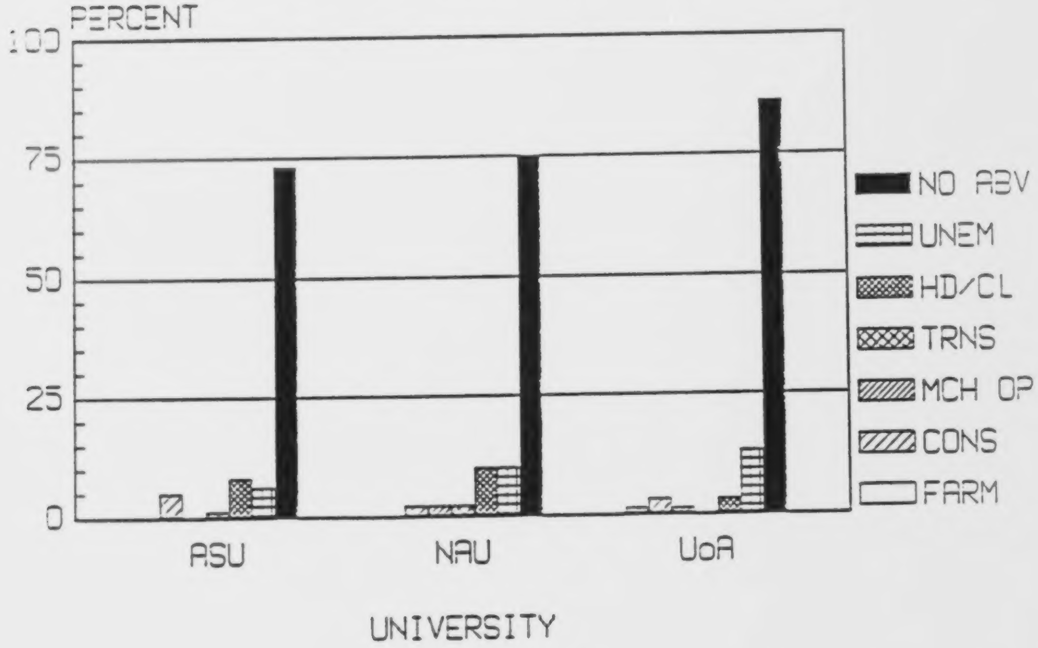
VAR 21 - TYPE OF OCCUPATION - MOTHER

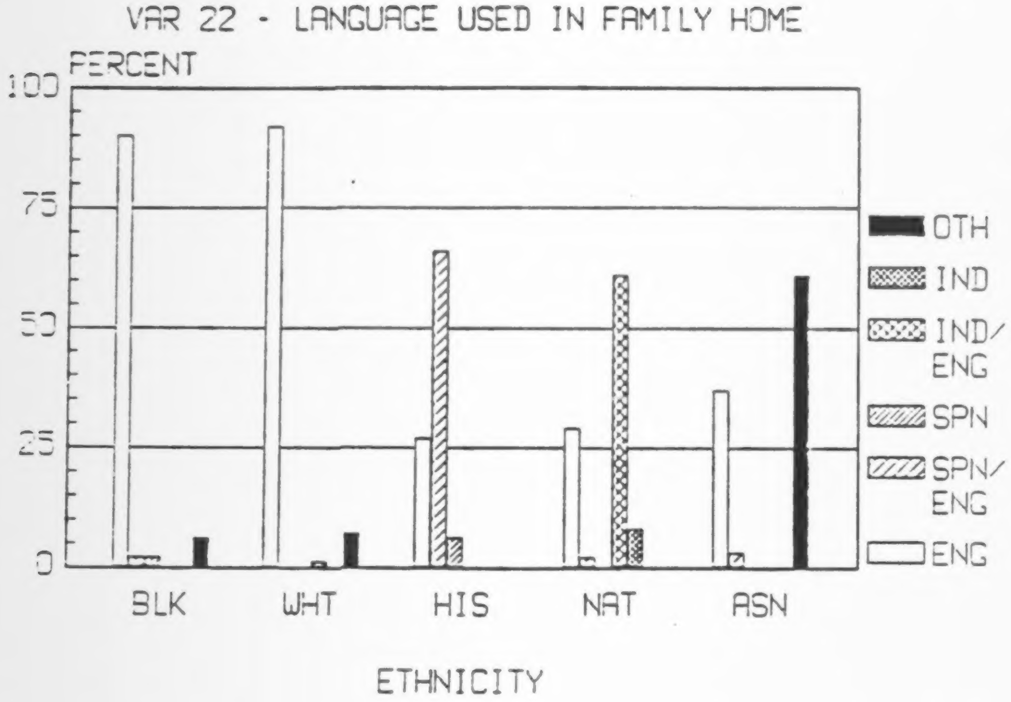


VAR 20 - TYPE OF OCCUPATION - MOTHER

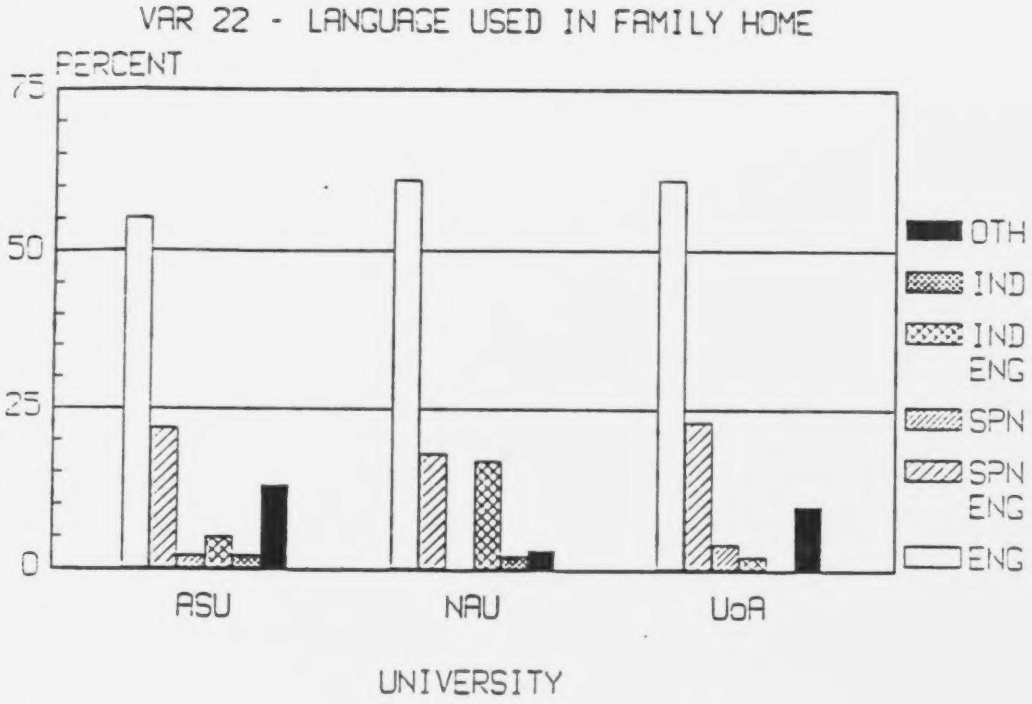


VAR 21 - TYPE OF OCCUPATION - MOTHER



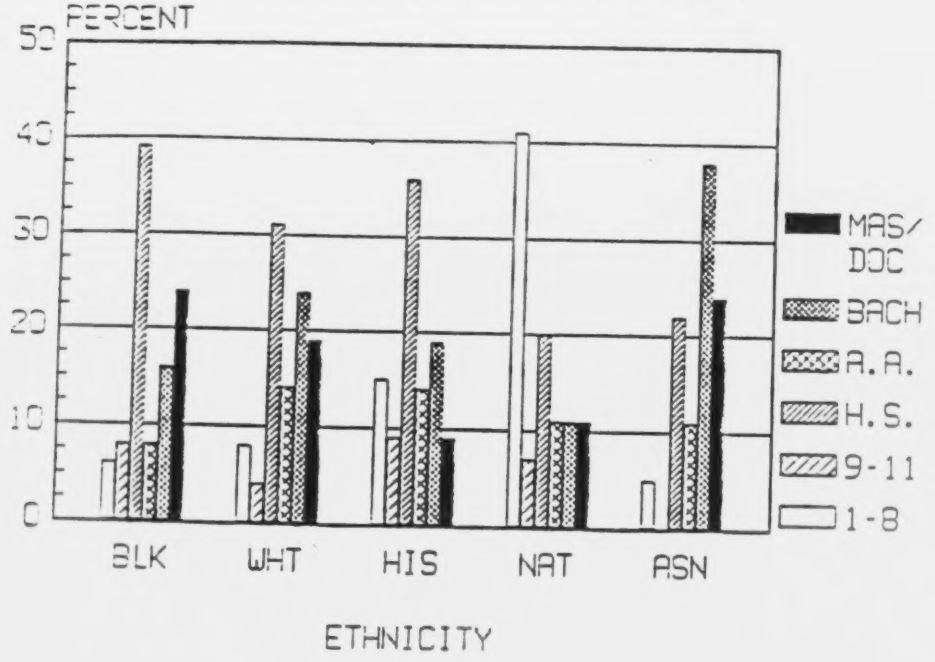


VAR 22 - LANGUAGE USED IN FAMILY HOME

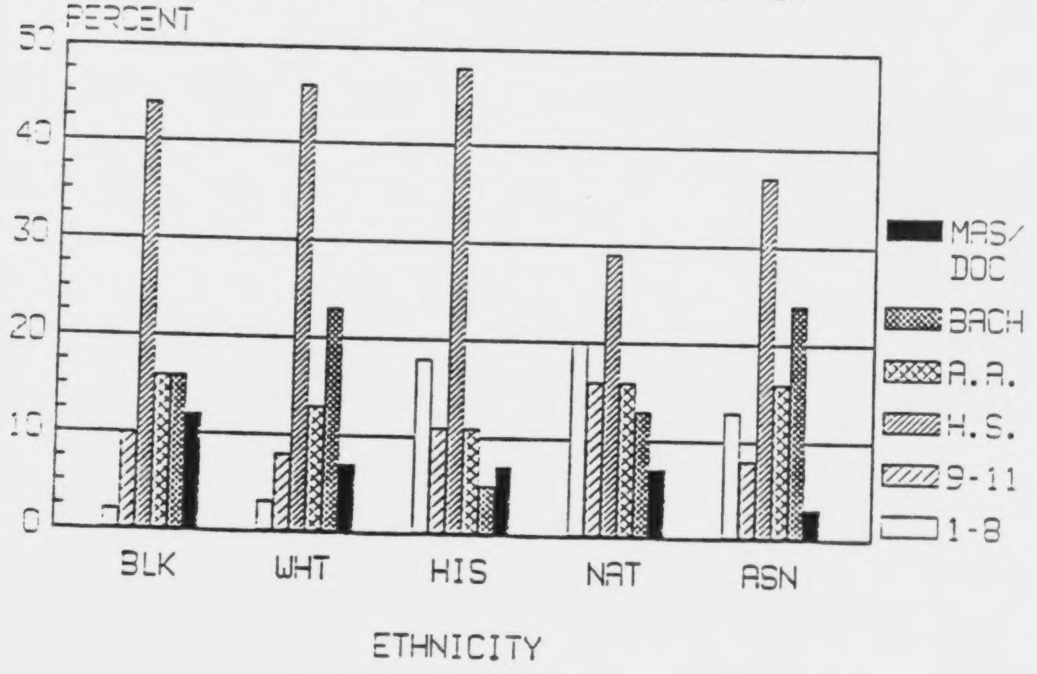

VAR 22 - LANGUAGE USED IN FAMILY HOME

207

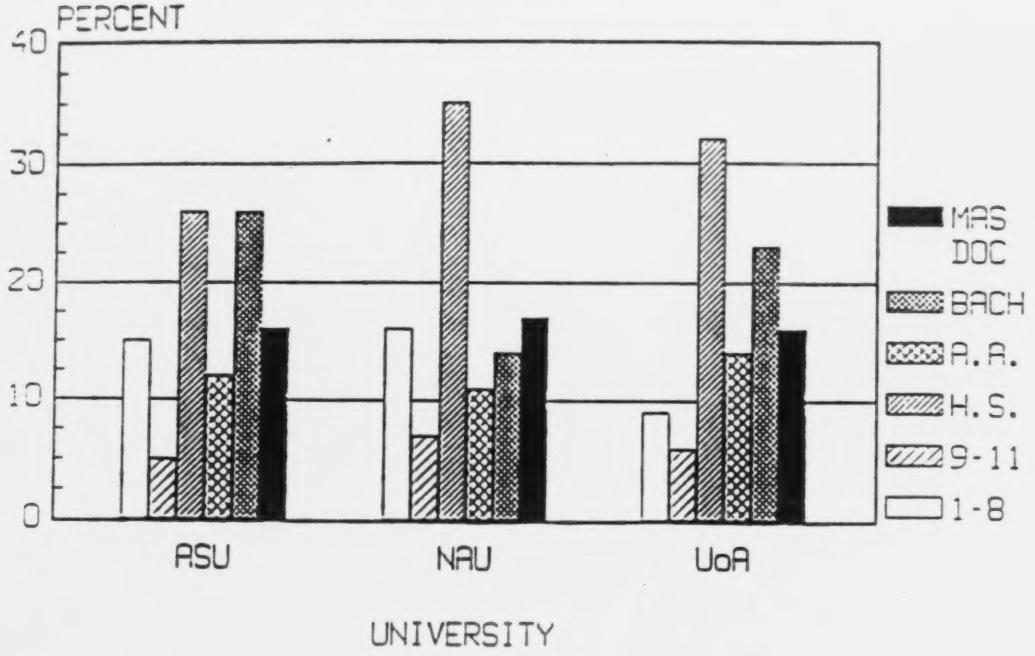
VAR 23 - EDUCATIONAL LEVEL OF FATHER



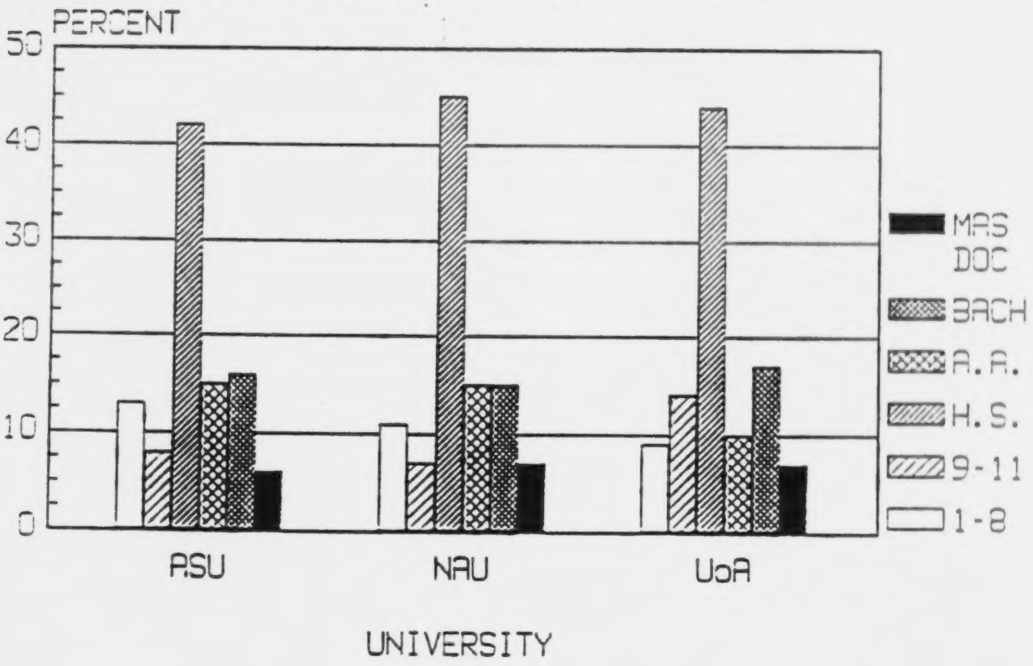
VAR 24 - EDUCATIONAL LEVEL OF MOTHER

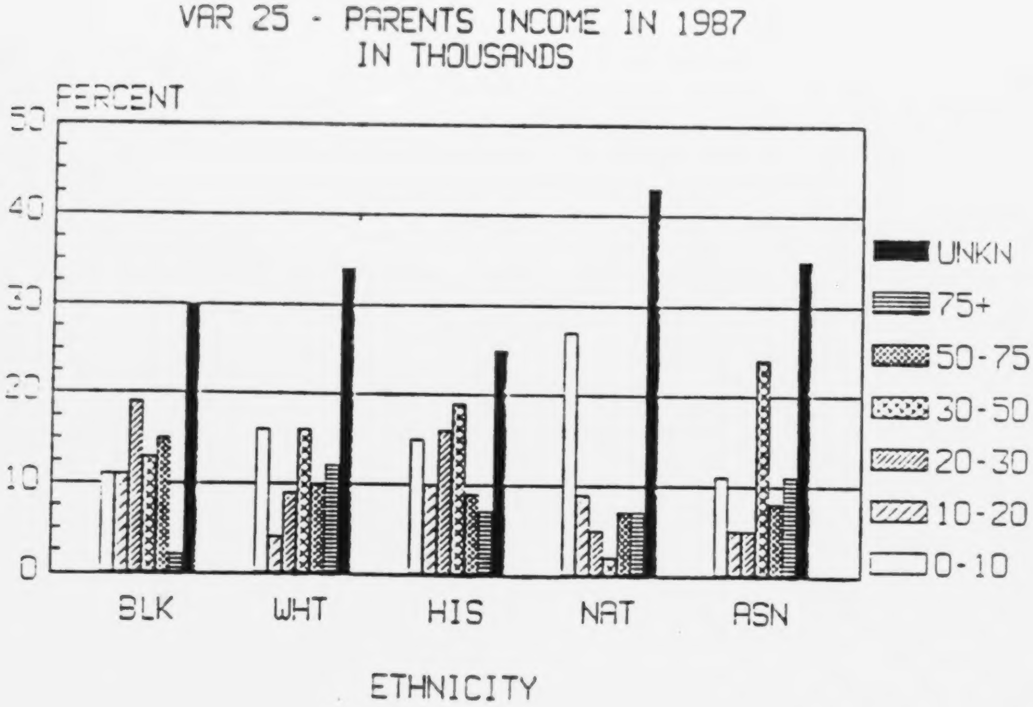


VAR 23 - EDUCATIONAL LEVEL OF FATHER

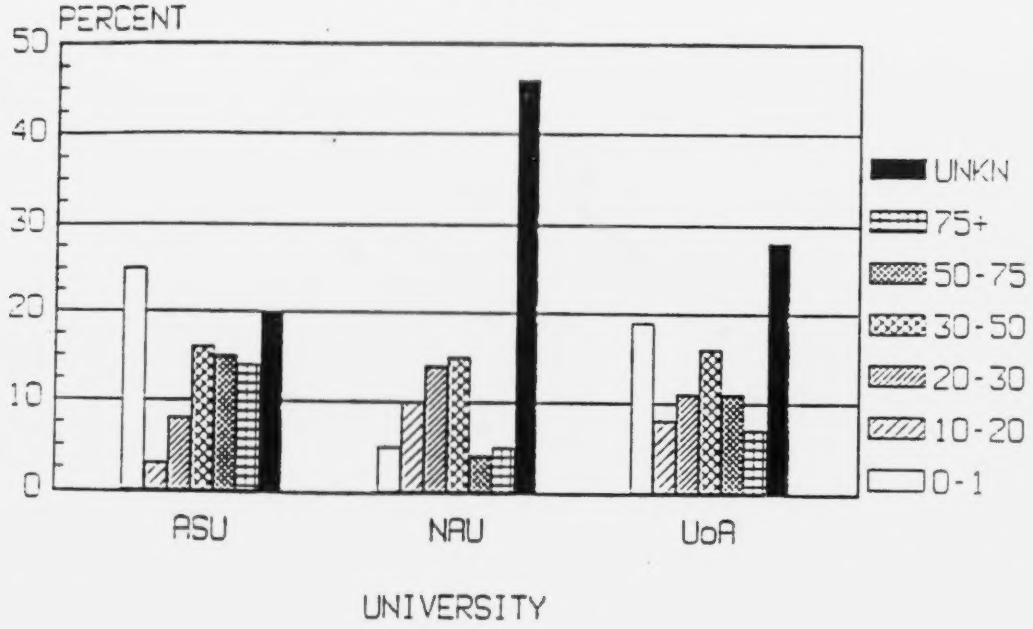


VAR 24 - EDUCATIONAL LEVEL OF MOTHER

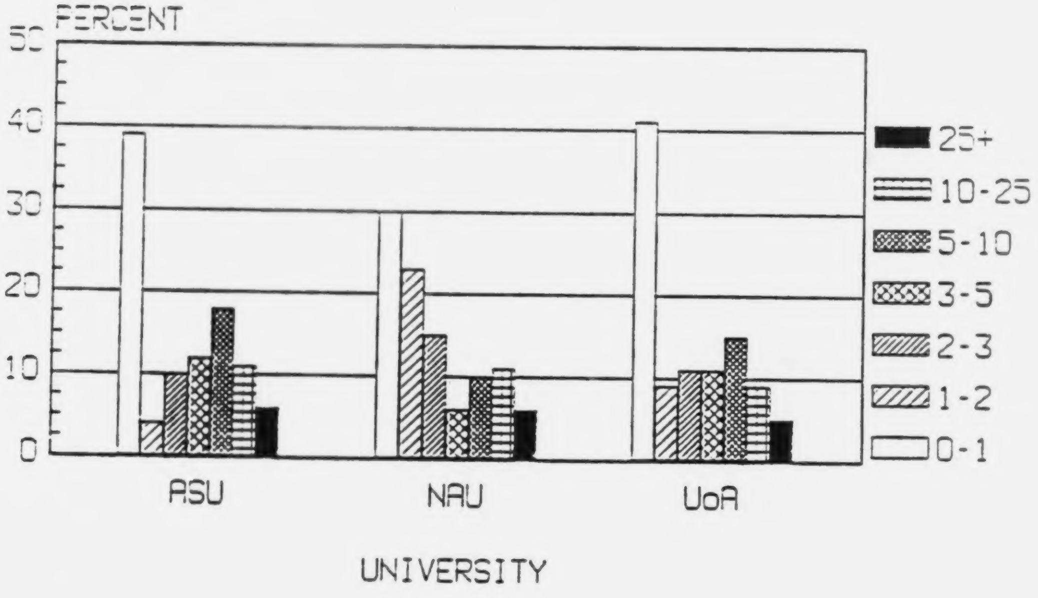



VAR 25 - PARENTS INCOME IN 1987
IN THOUSANDS
PERCENT
50
40
30
20
10
0
UNKN
75+
50-75
30-50
20-30
10-20
0-10
BLK
WHT
HIS
NAT
ASN
ETHNICITY

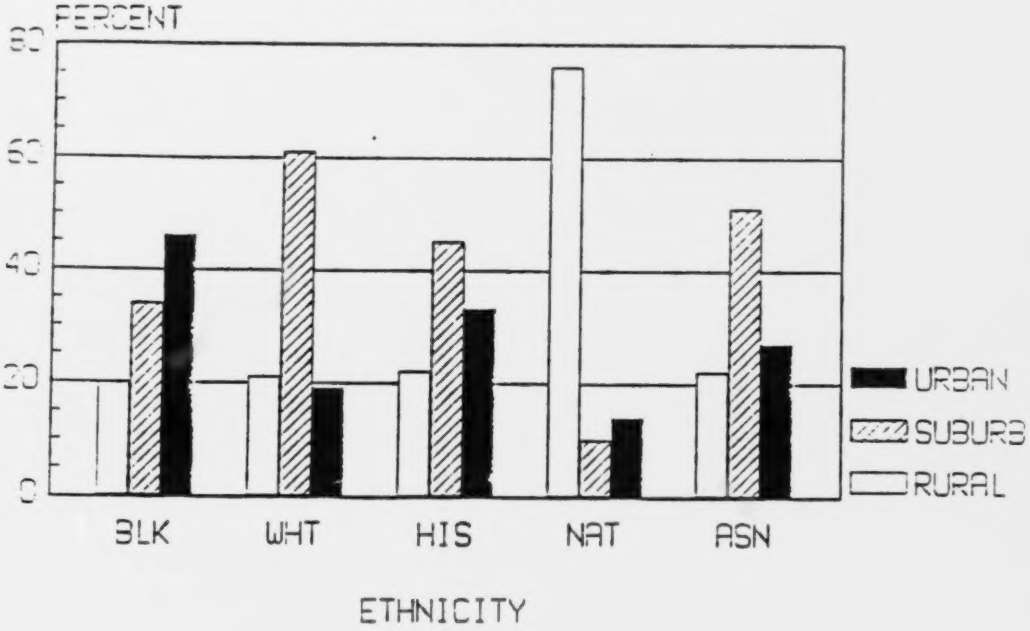
VAR 25 -PARENTS INCOME IN 1987
IN THOUSANDS



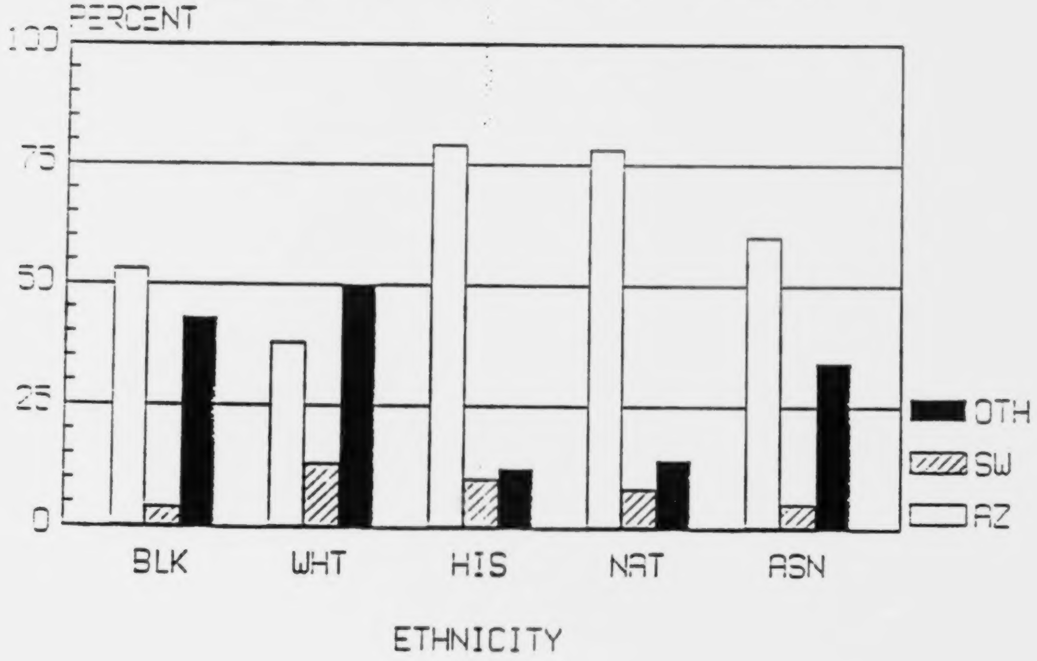
VAR 26 - PERSONAL INCOME IN 1987
IN THOUSANDS



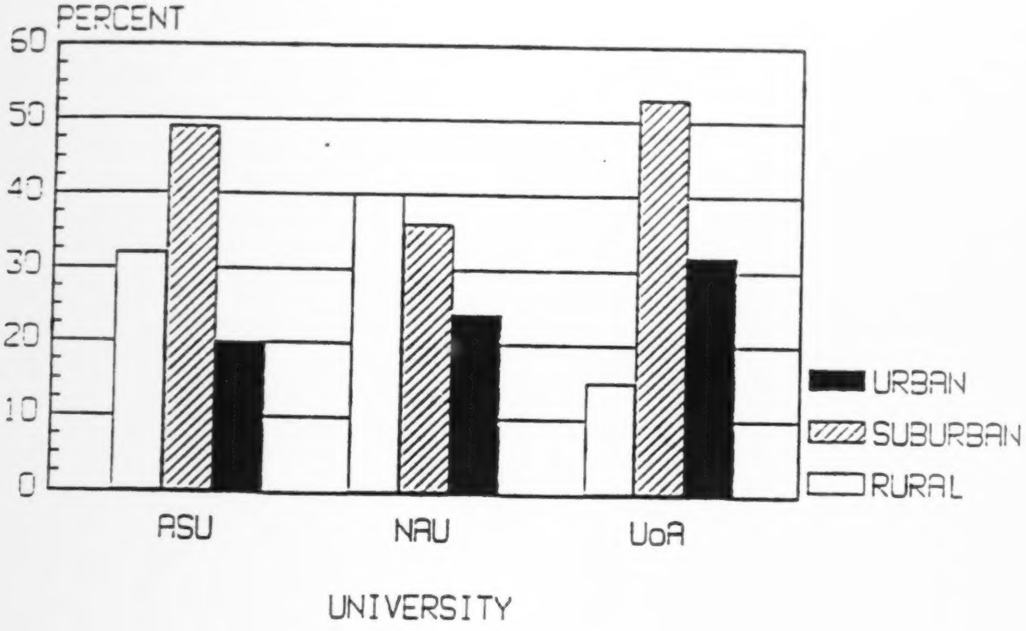
VAR 27 - KIND OF LOCALITY LIVED
IN MOST OF LIFE



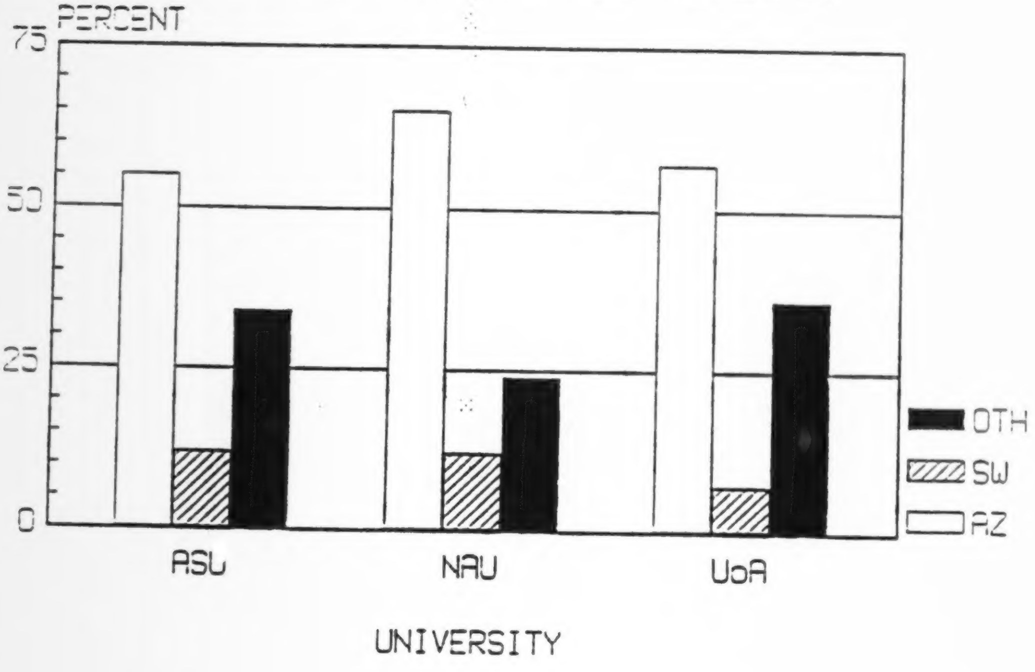
VAR 28 - STATE LIVED IN MOST TO AGE 18

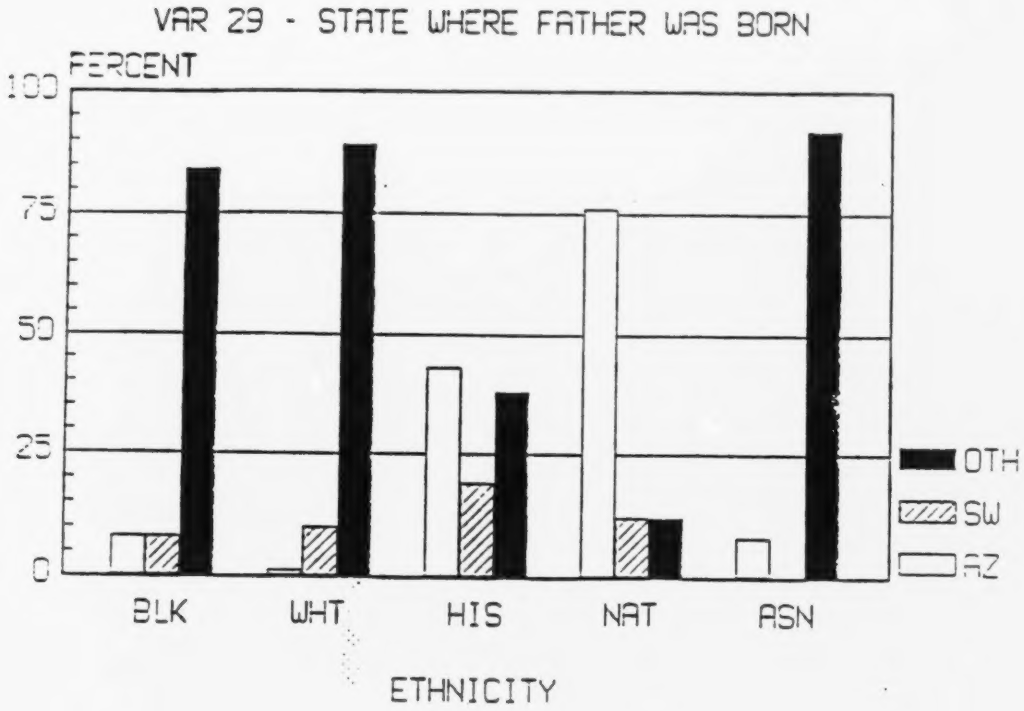


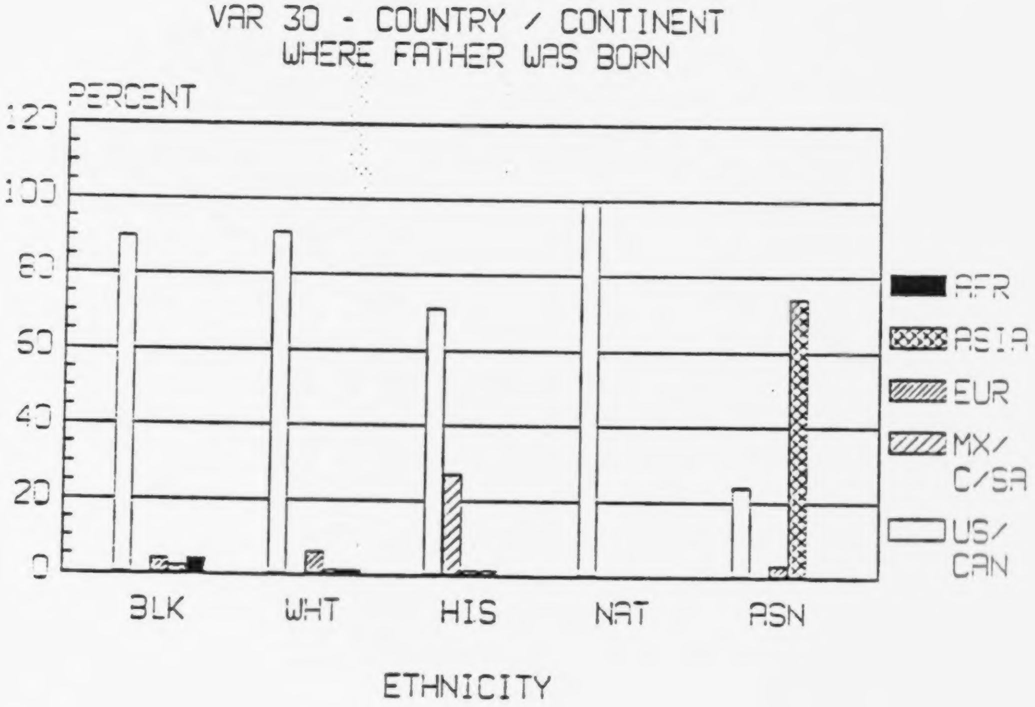
VAR 27 - KIND OF LOCALITY LIVED IN MOST OF LIFE



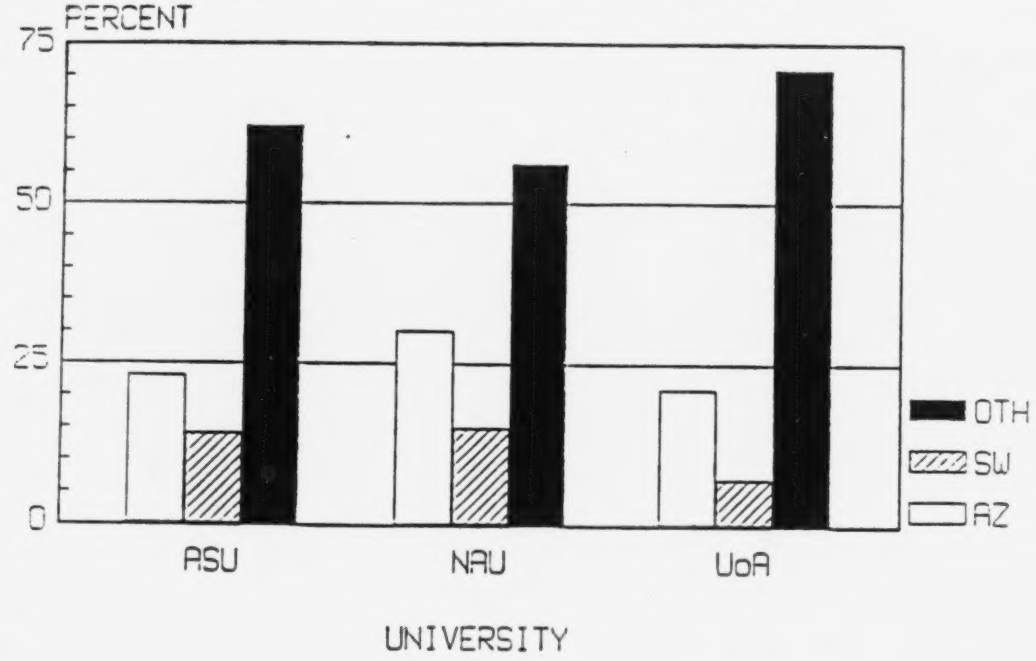
VAR 28 - STATE LIVED IN MOST TO AGE 18



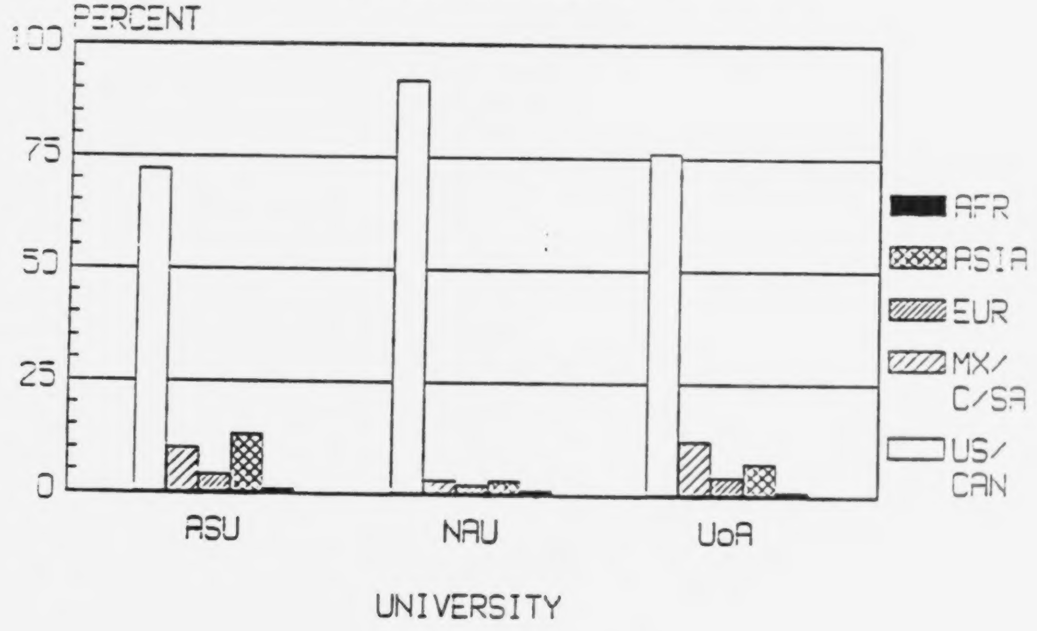

VAR 29 - STATE WHERE FATHER WAS BORN


VAR 30 - COUNTRY / CONTINENT
WHERE FATHER WAS BORN

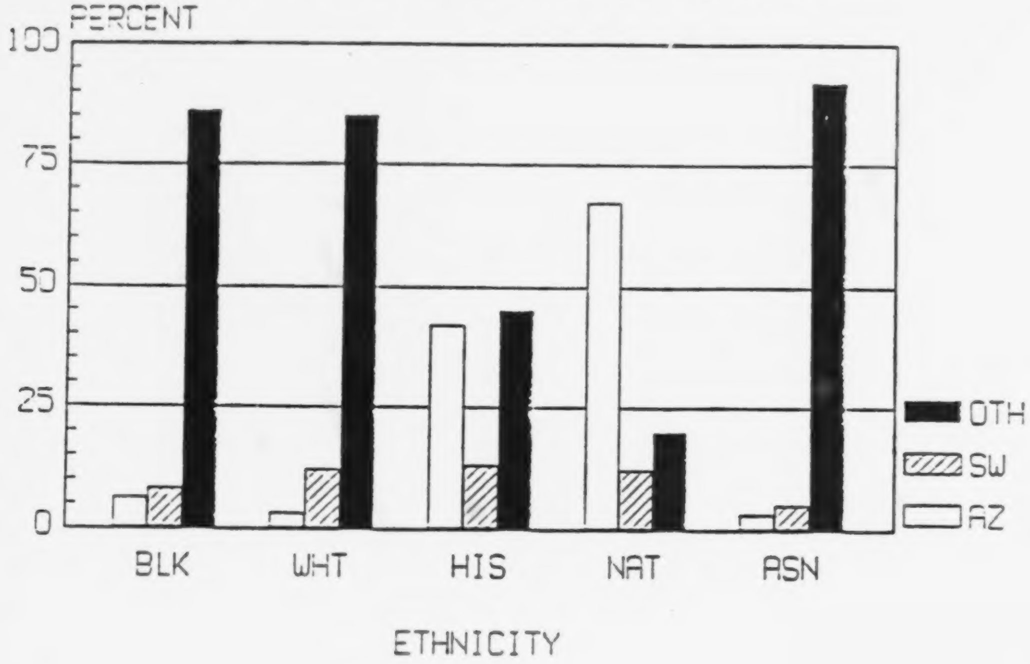
VAR 29 - STATE WHERE FATHER WAS BORN



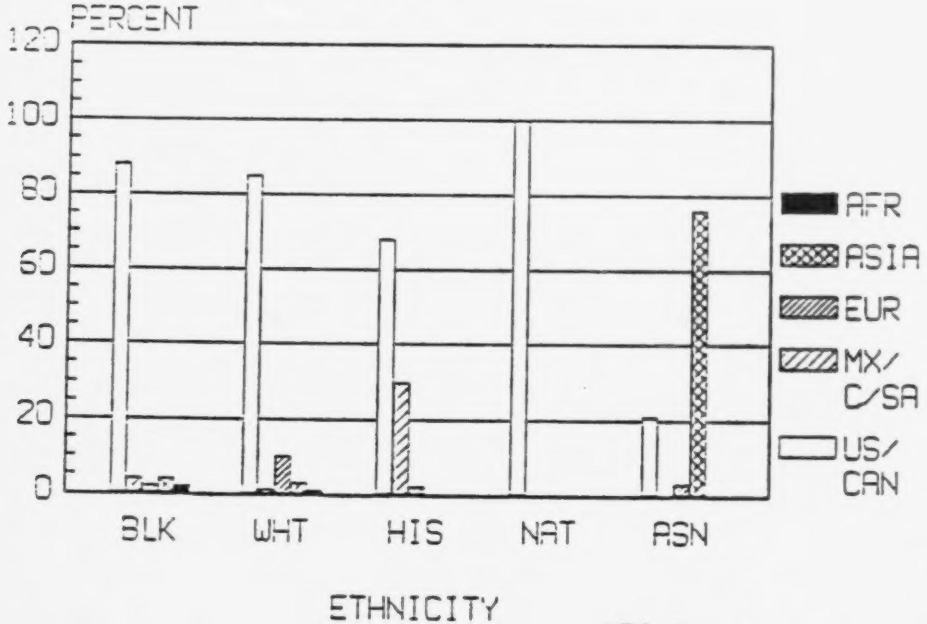
VAR 30 - COUNTRY/CONTINENT WHERE FATHER WAS BORN

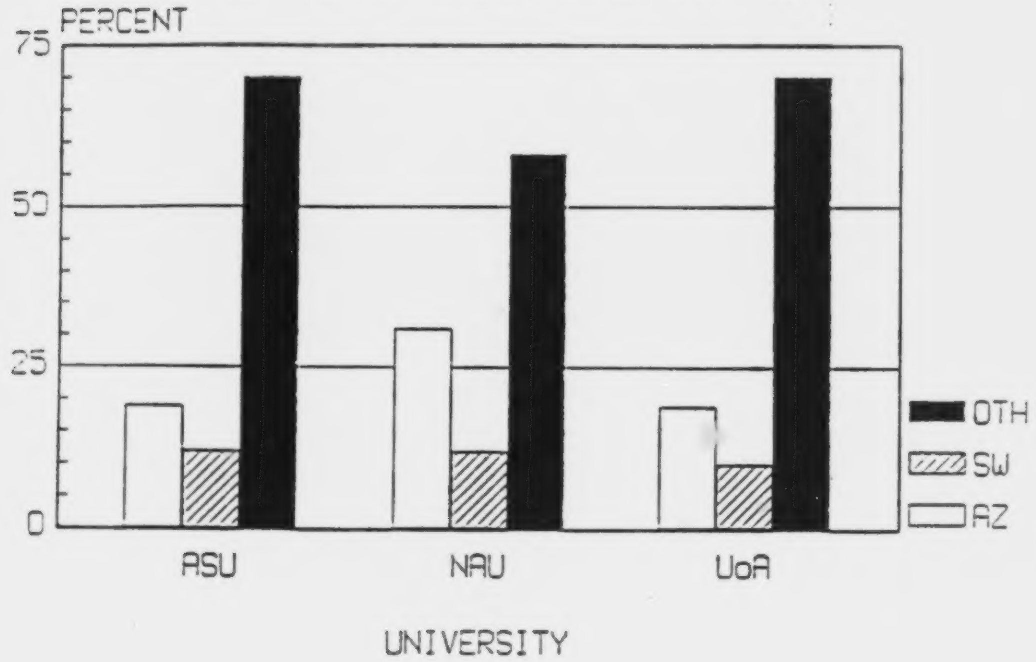


VAR 31 - STATE WHERE MOTHER WAS BORN

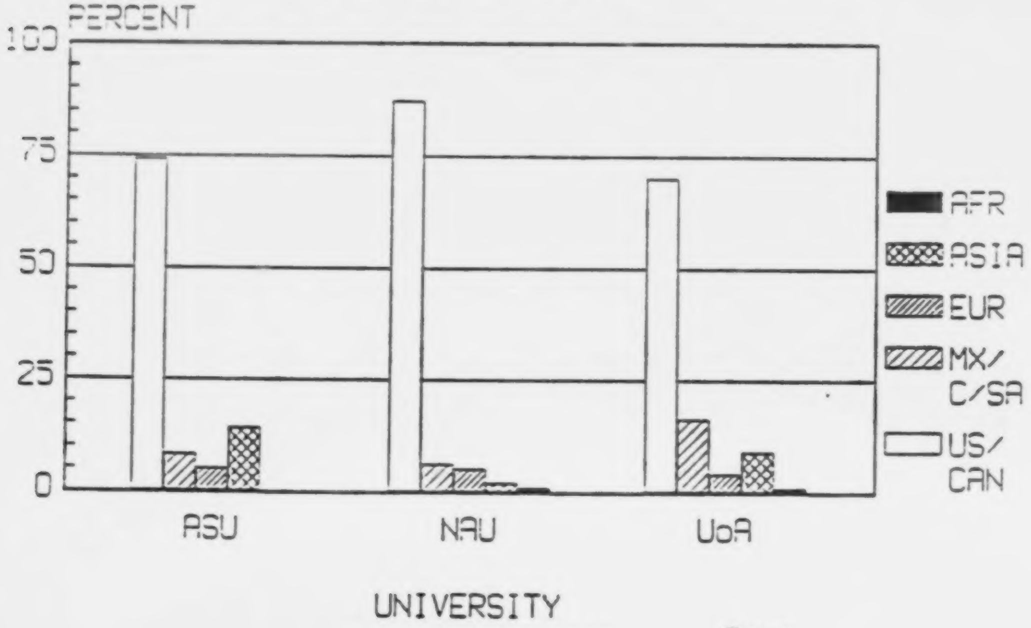


VAR 32 - COUNTRY / CONTINENT
MOTHER BIRTHPLACE



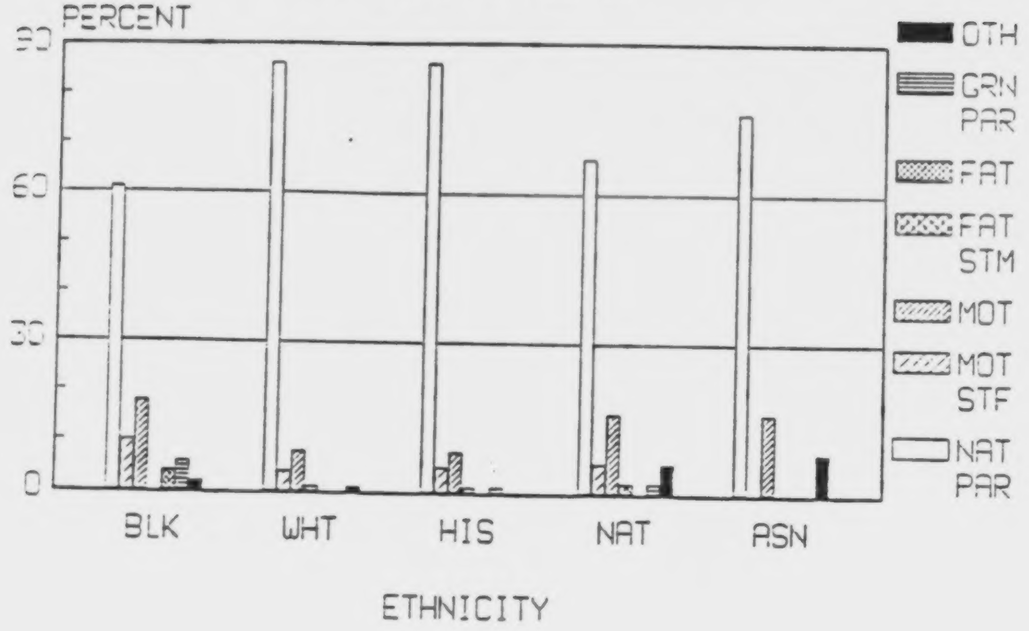


VAR 31 - STATE WHERE MOTHER WAS BORN

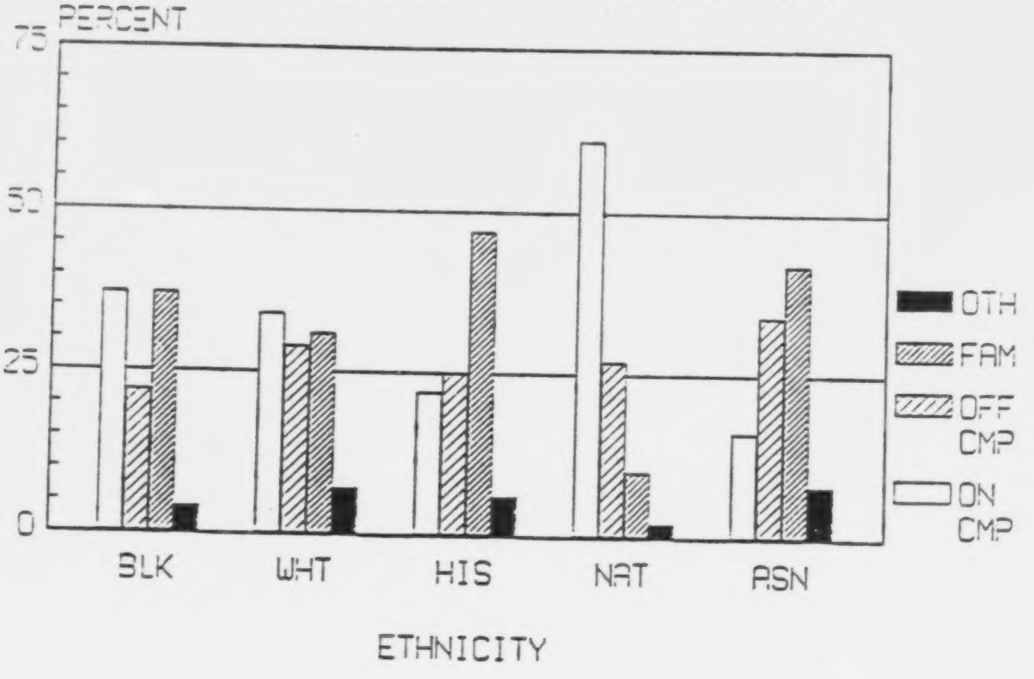


VAR 32 - COUNTRY/CONTINENT WHERE MOTHER WAS BORN

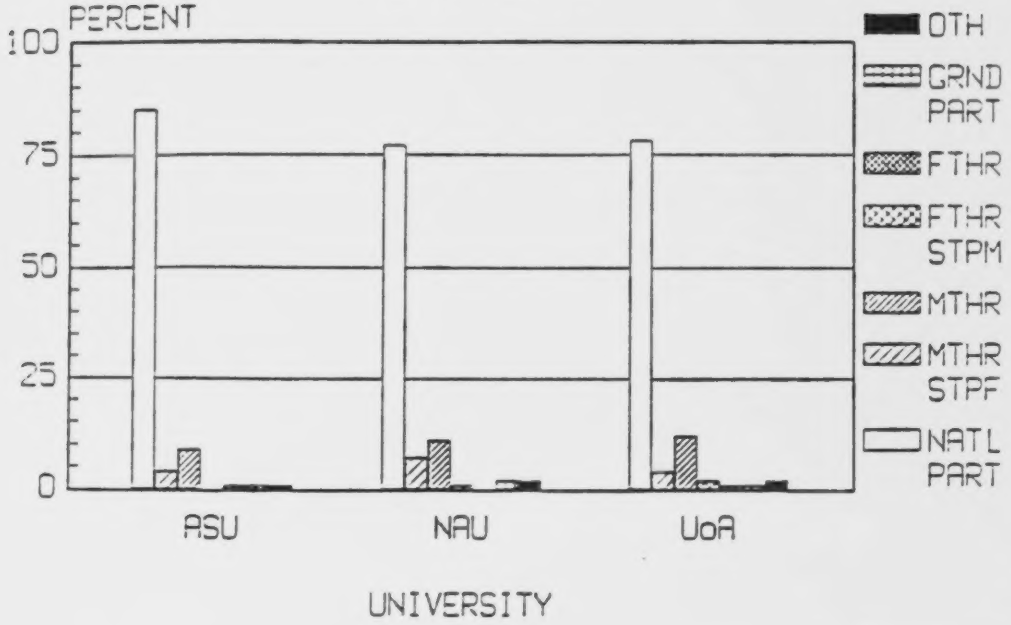
VAR 33 - WITH WHOM LIVED MOST OF TIME TO AGE 18



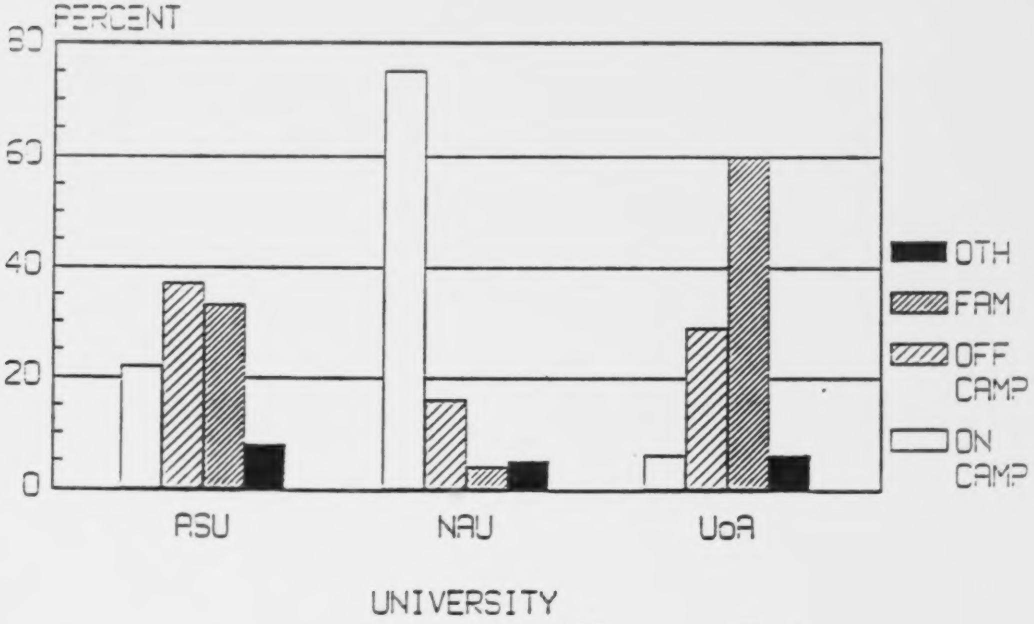
VAR 34 - RESIDENCE DURING ACADEMIC YEAR

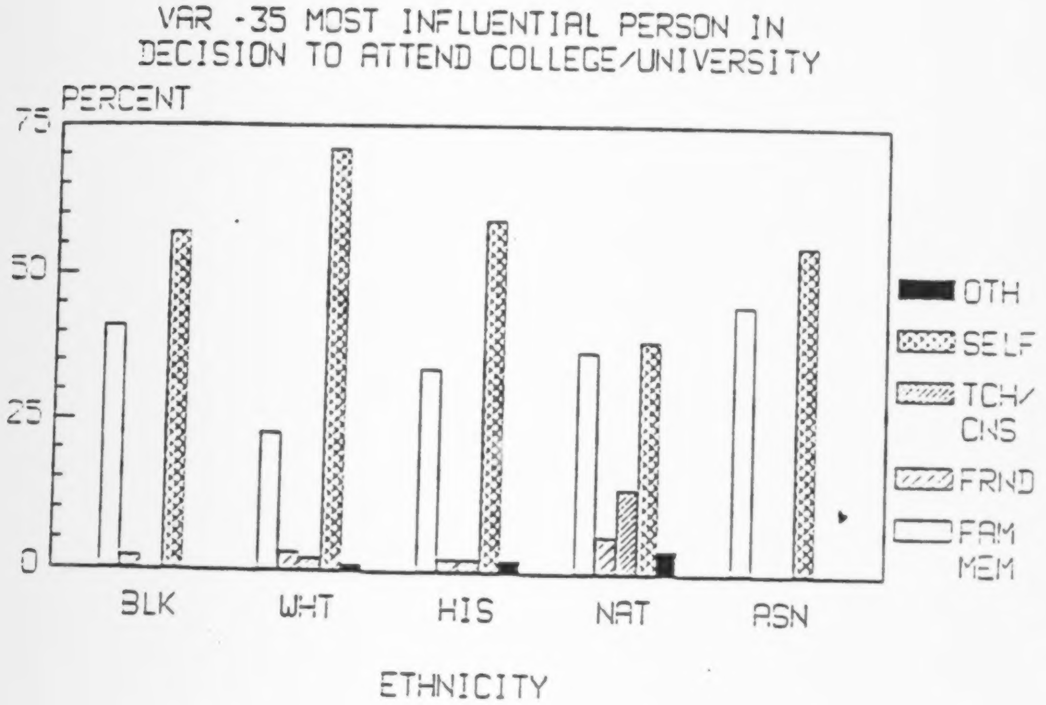


VAR 33 - WITH WHOM LIVED MOST OF TIME TO AGE 18

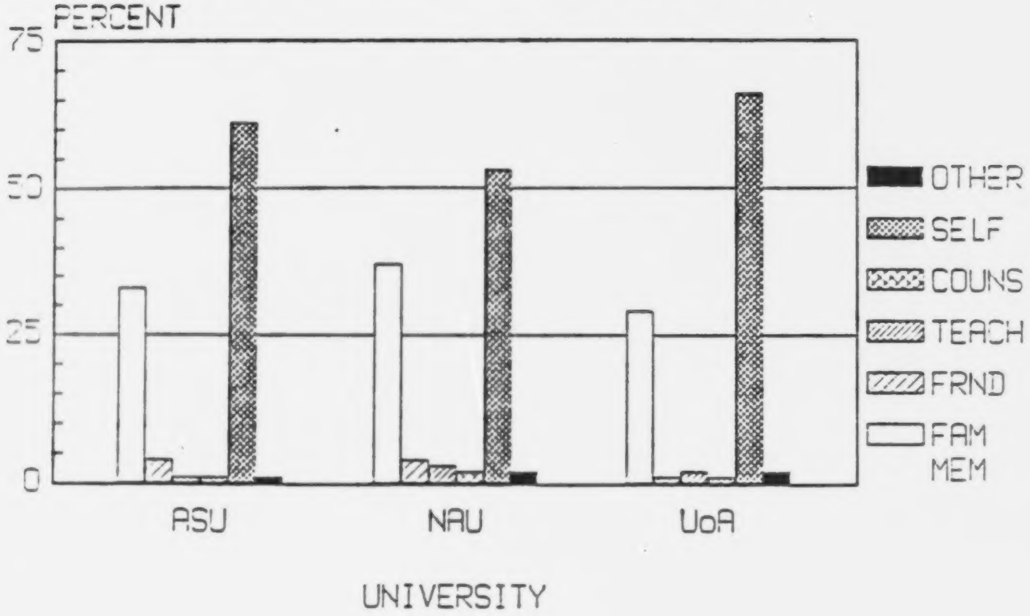


VAR 34 - RESIDENCE DURING ACADEMIC YEAR

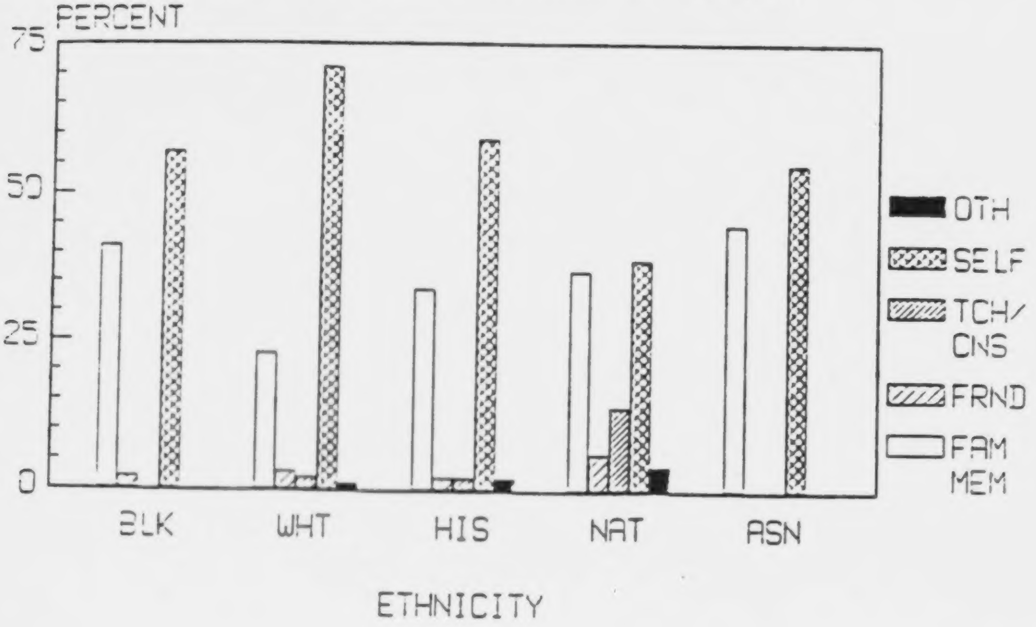



VAR -35 MOST INFLUENTIAL PERSON IN
DECISION TO ATTEND COLLEGE/UNIVERSITY
PERCENT
75
50
25
0
OTH
SELF
TCH/
CNS
FRND
FAM
MEM
BLK
WHT
HIS
NAT
ASN
ETHNICITY

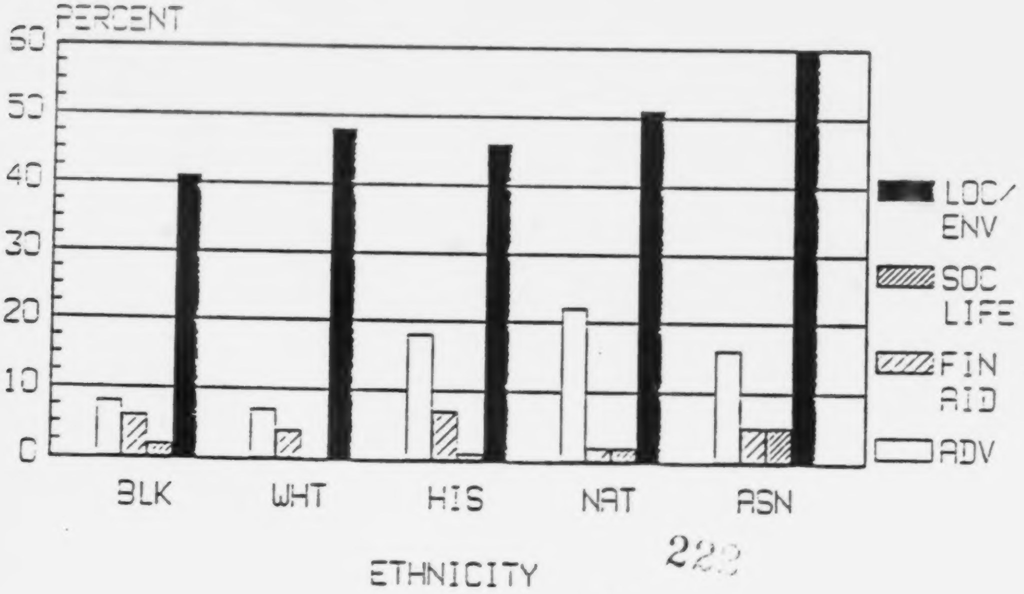
VAR 35 - MOST INFLUENTIAL PERSON IN DECISION TO ATTEND COLLEGE/UNIVERSITY



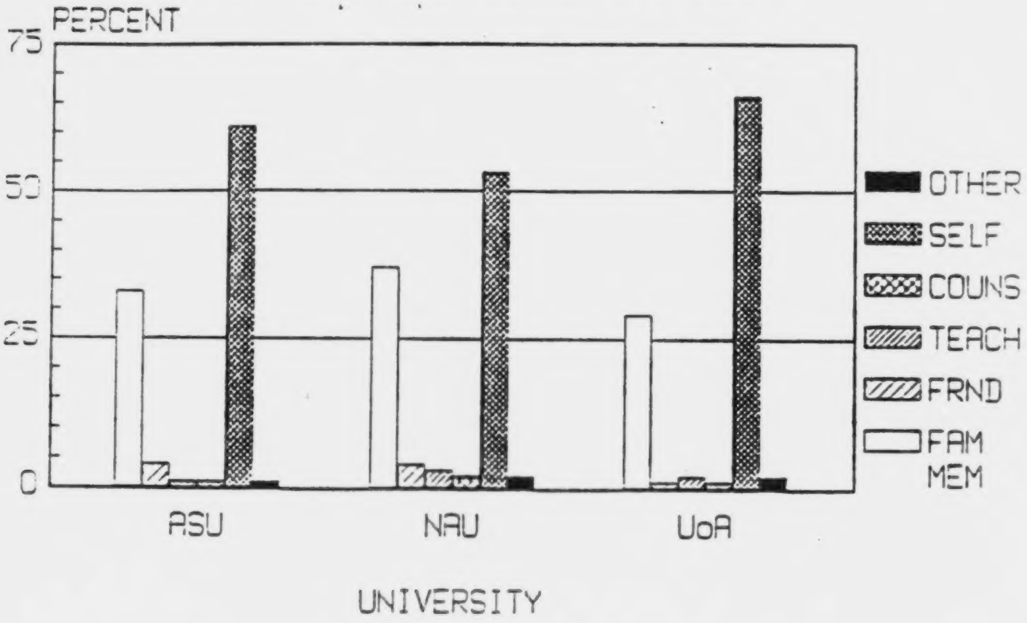
VAR -35 MOST INFLUENTIAL PERSON IN DECISION TO ATTEND COLLEGE/UNIVERSITY



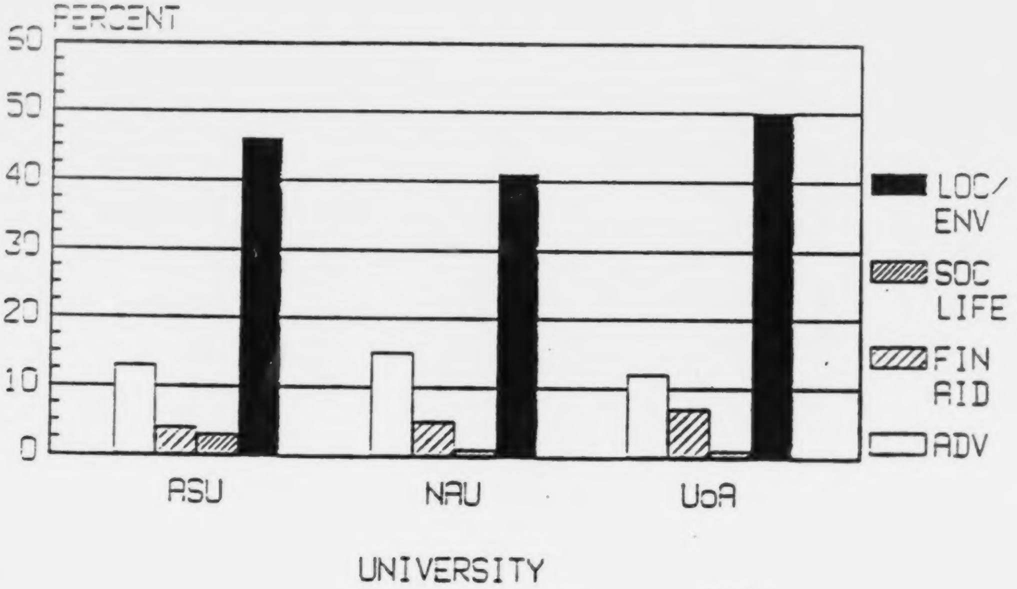
VAR 36 - MOST INFLUENTIAL FACTOR IN ATTENDING THIS UNIVERSITY



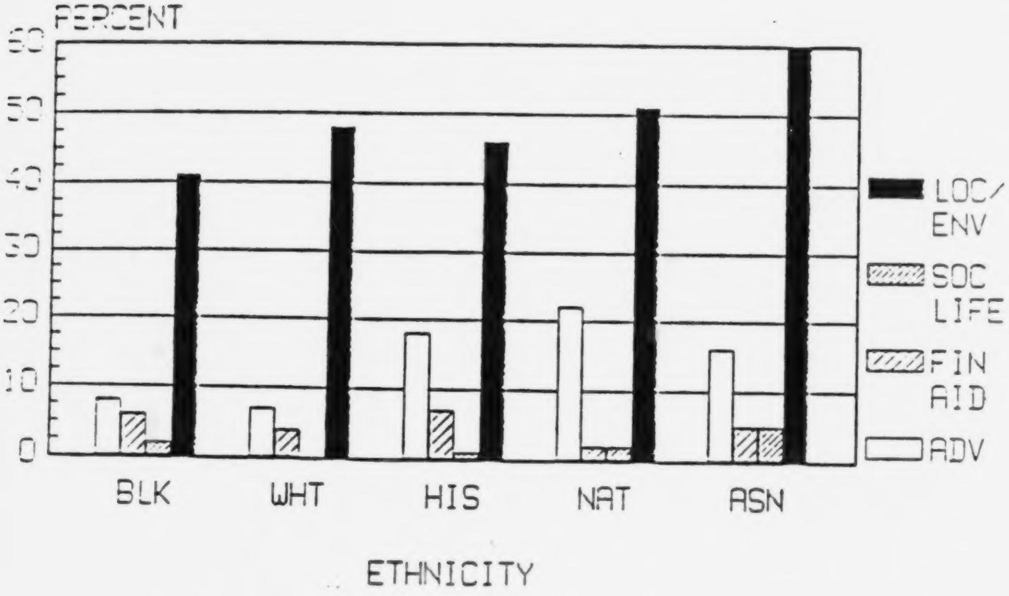
VAR 35 - MOST INFLUENTIAL PERSON IN
DECISION TO ATTEND COLLEGE/UNIVERSITY



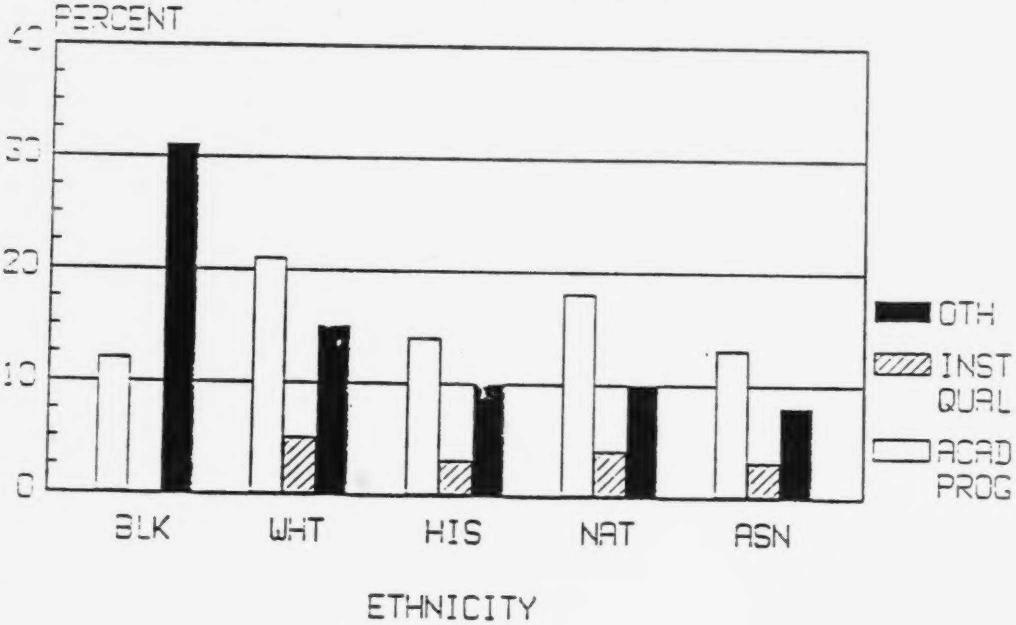
VAR 36 - MOST INFLUENTIAL FACTOR IN
ATTENDING THIS UNIVERSITY



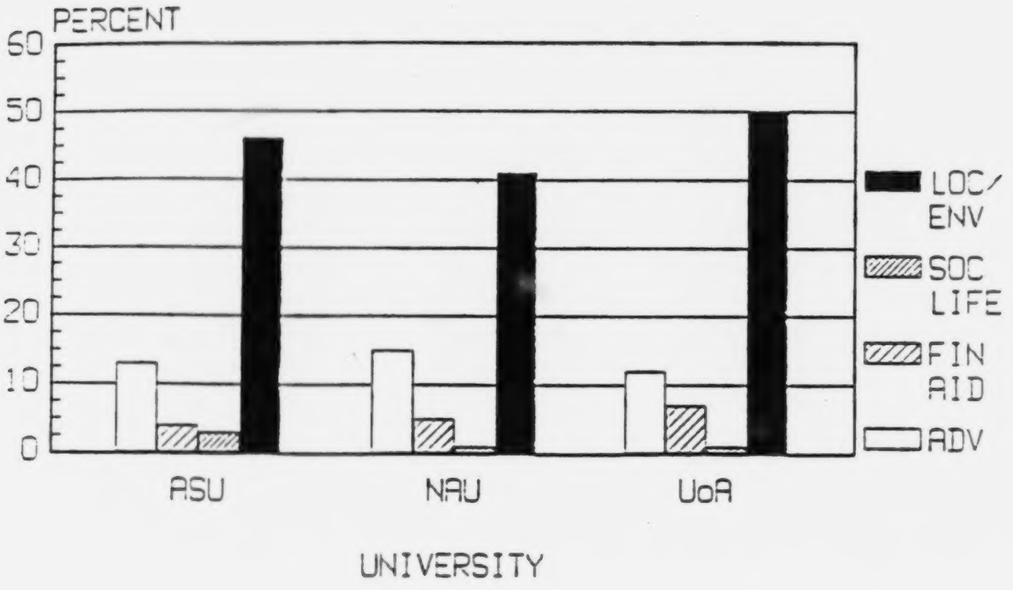
VAR 36 - MOST INFLUENTIAL FACTOR IN ATTENDING THIS UNIVERSITY



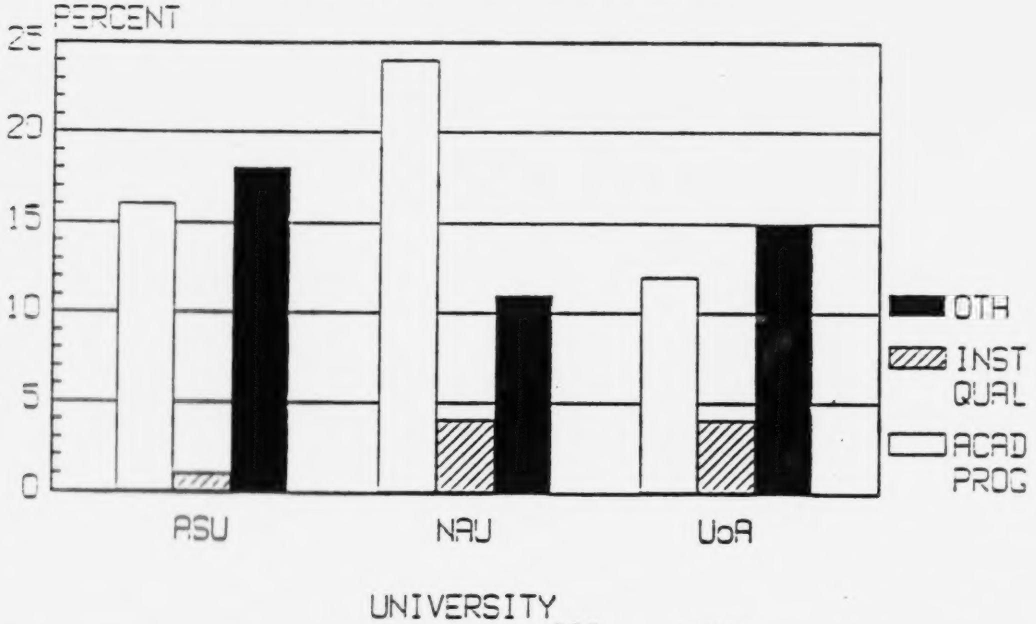
VAR 36 CONTD - MOST INFLUENTIAL FACTOR IN ATTENDING THIS UNIVERSITY

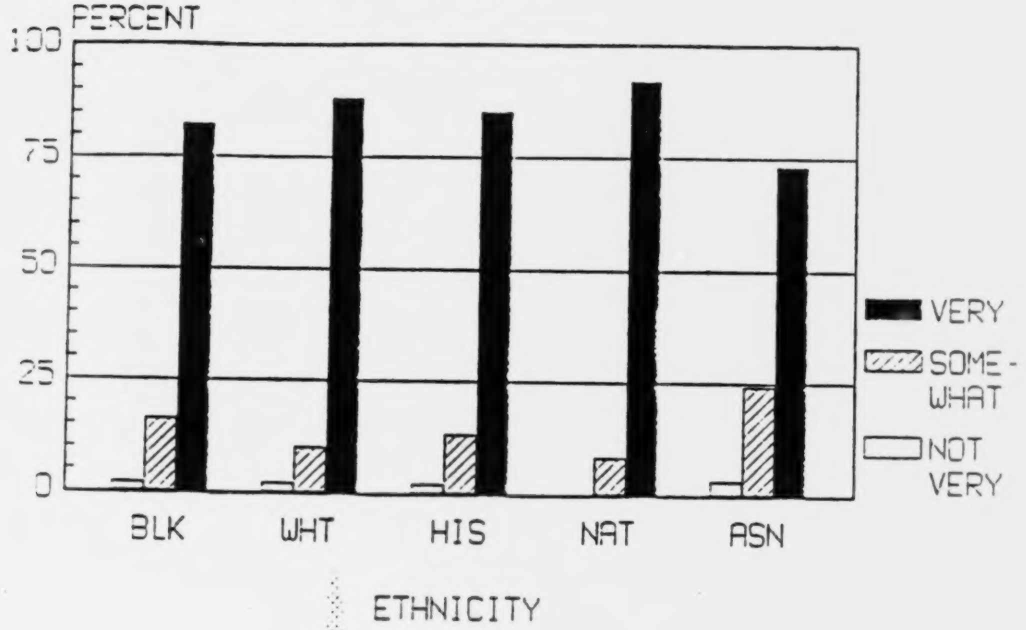


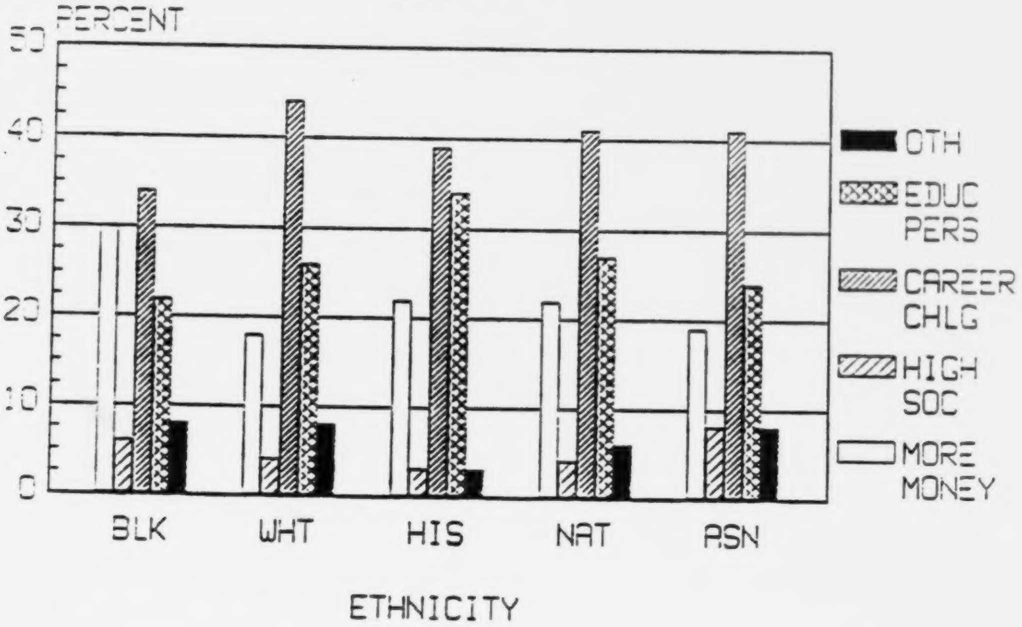
VAR 36 - MOST INFLUENTIAL FACTOR IN ATTENDING THIS UNIVERSITY

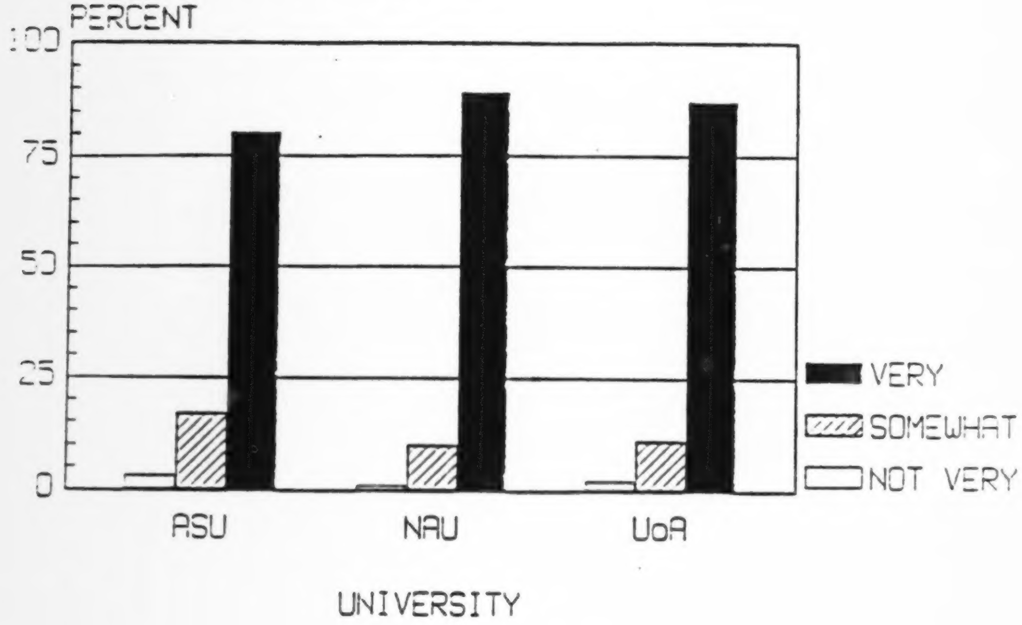


VAR 36 CONTD - MOST INFLUENTIAL FACTOR IN ATTENDING THIS UNIVERSITY

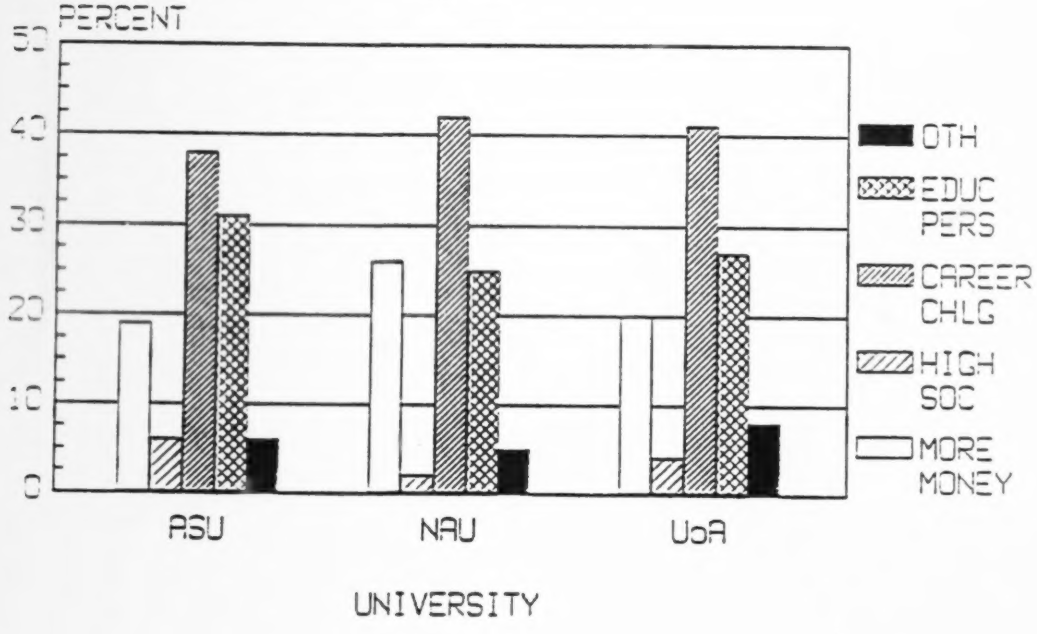



VAR 37 - IMPORTANCE OF COLLEGE DEGREE IN LIFE


VAR 38 - REASON FOR SEEKING COLLEGE DEGREE



VAR 37 - IMPORTANCE OF COLLEGE DEGREE IN LIFE



VAR 38 - REASON FOR SEEKING COLLEGE DEGREE

APPENDIX E

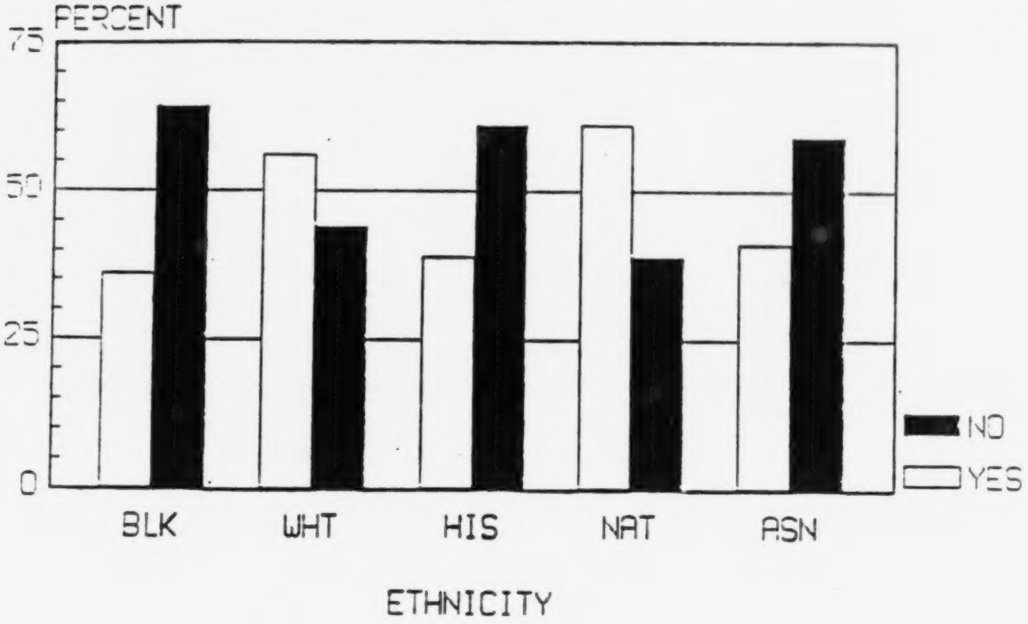
EDUCATION PRIOR TO ENTERING UNIVERSITY

1. About one half of the respondents attended another college or university prior to the present university (Var 39) and the college most frequently cited was a community college in Arizona (Var 40).

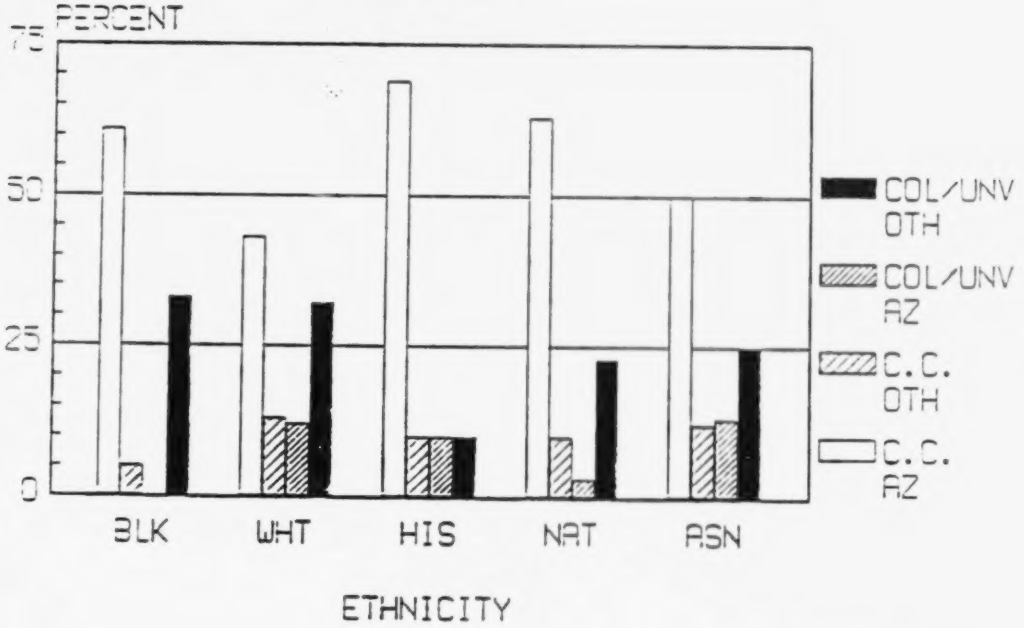
2. The most difficult problem encountered was loss of credit for Blacks and Native Americans with increased cost also a problem for White and Hispanic students (Var 41)

3. The most influential person or factor for the decision to transfer from a community college to a university is not definitive (Var 42), but the availability of academic program is a factor, especially for Whites and Hispanics. The reason for choosing the present university (Var 43) was predominantly geographic location for Whites and Hispanics, family for Blacks, and academic program for Asians.

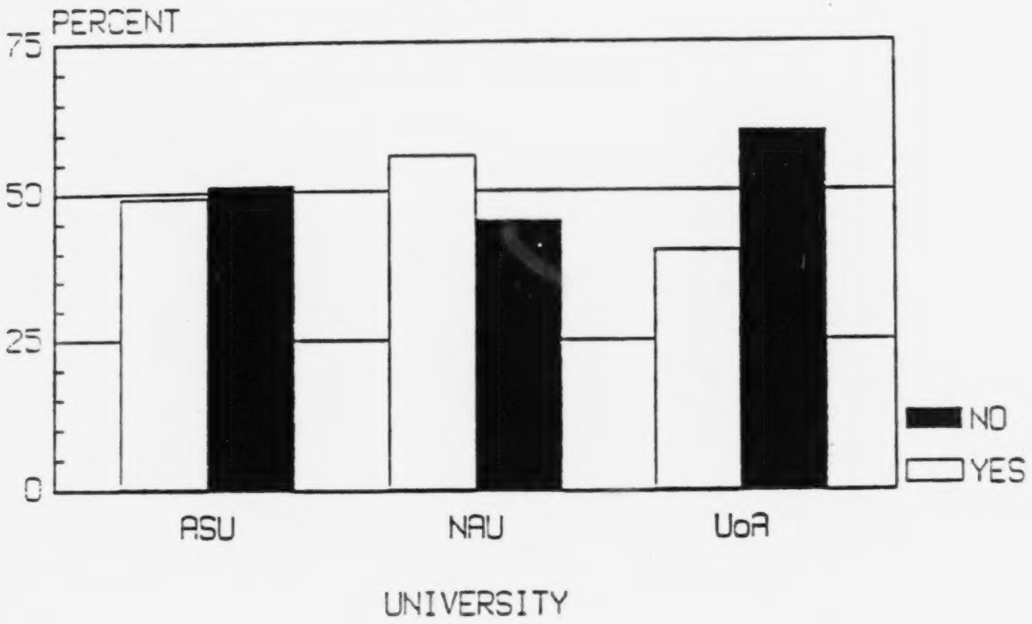
VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY



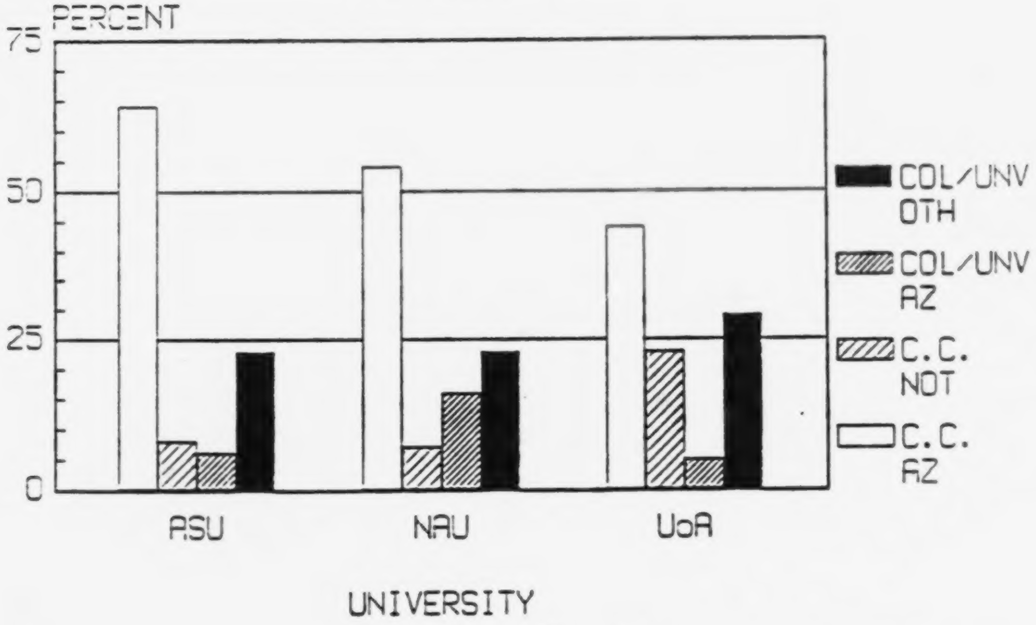
VAR 40 - KIND OF COLLEGE ATTENDED PREVIOUSLY



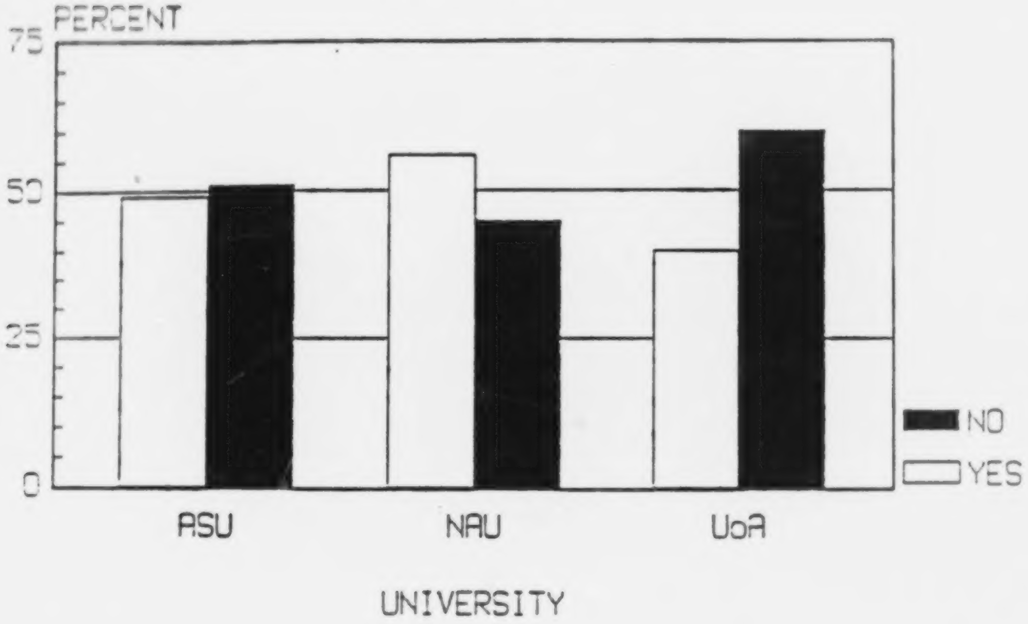
VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY



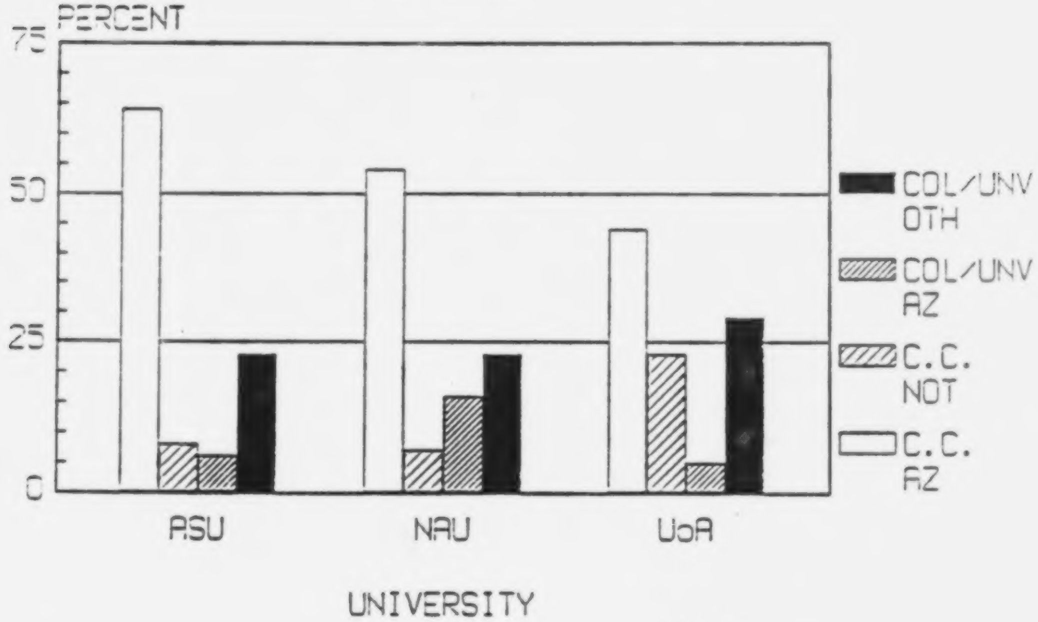
VAR 40 - KIND OF COLLEGE ATTENDED PREVIOUSLY

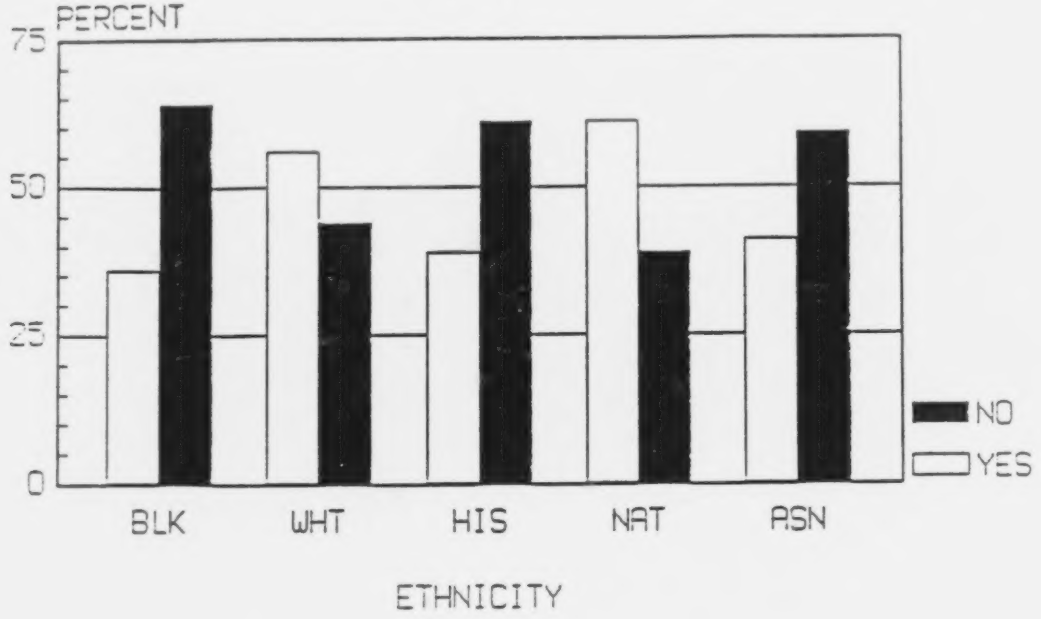


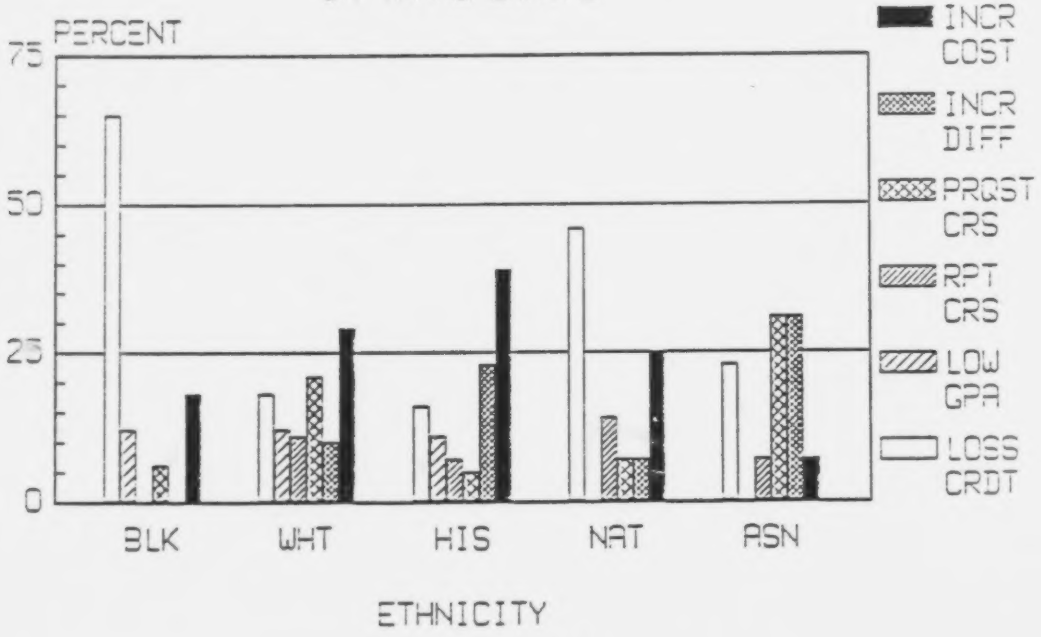
VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY

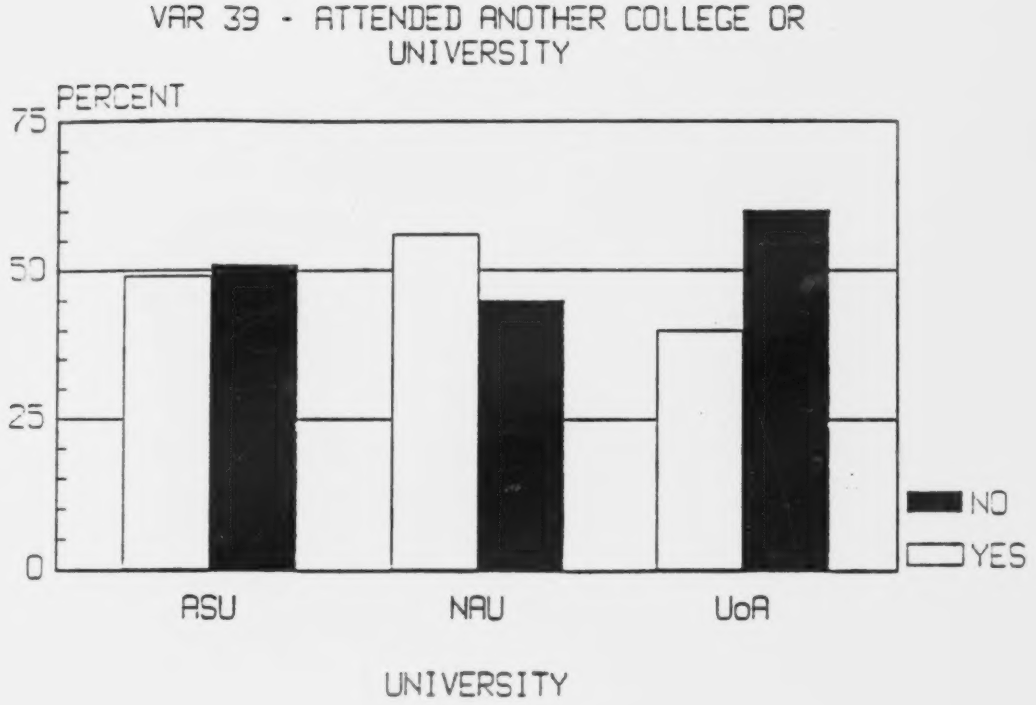


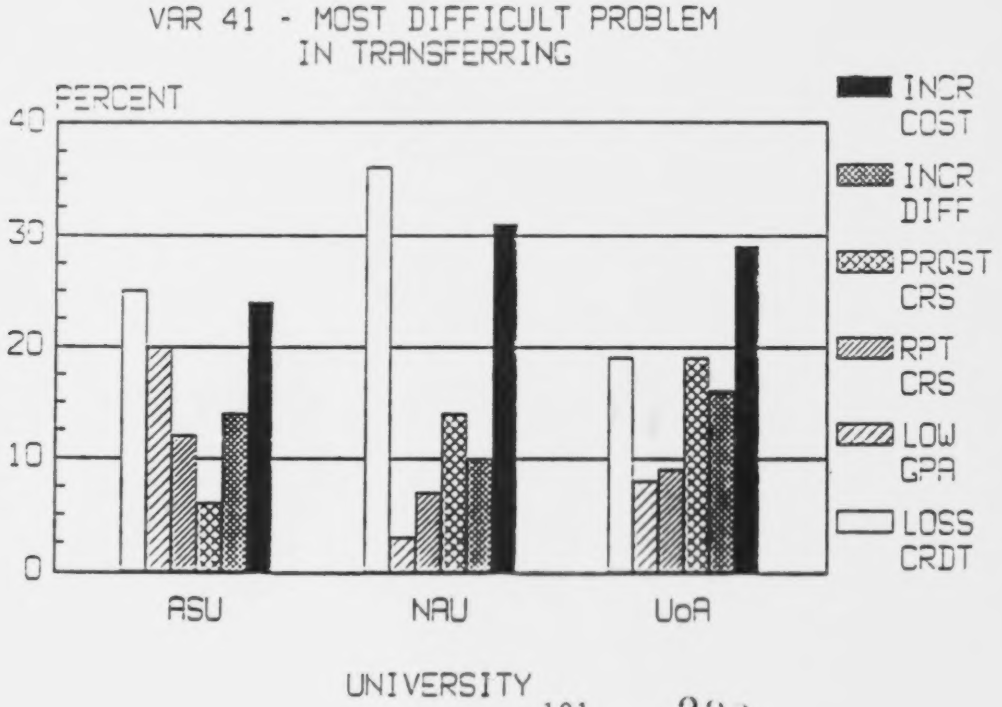
VAR 40 - KIND OF COLLEGE ATTENDED PREVIOUSLY

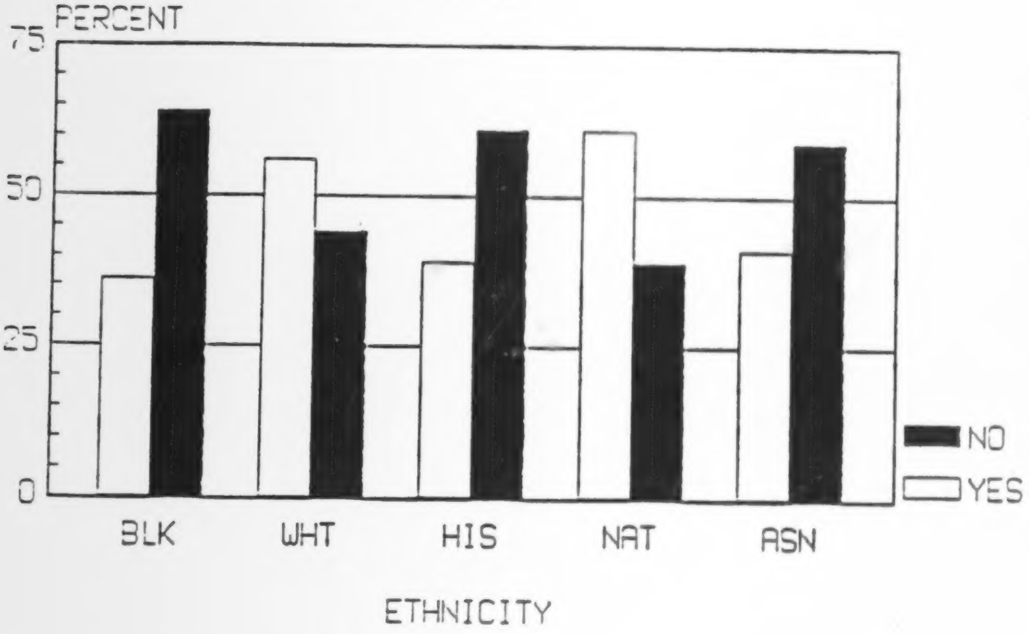


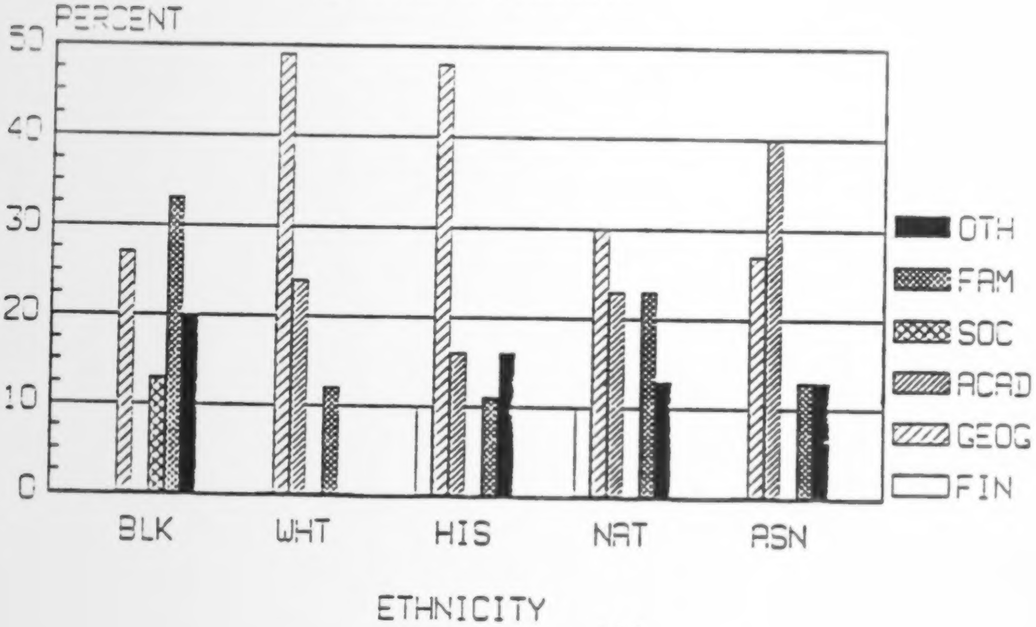

VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY


VAR 41 -MOST DIFFICULT PROBLEM IN TRANSFERRING

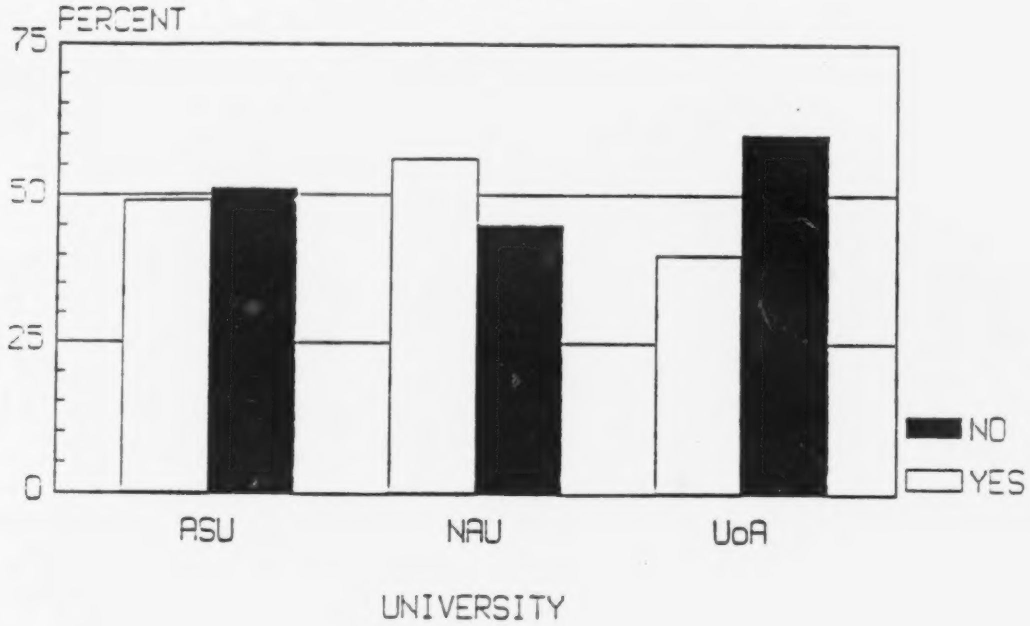

VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY
PERCENT
75
50
25
0
NO
YES
ASU
NAU
UoA
UNIVERSITY


VAR 41 - MOST DIFFICULT PROBLEM IN TRANSFERRING
PERCENT
40
30
20
10
0
INCR COST
INCR DIFF
PRQST CRS
RPT CRS
LOW GPA
LOSS CRDT
ASU
NAU
UoA
UNIVERSITY

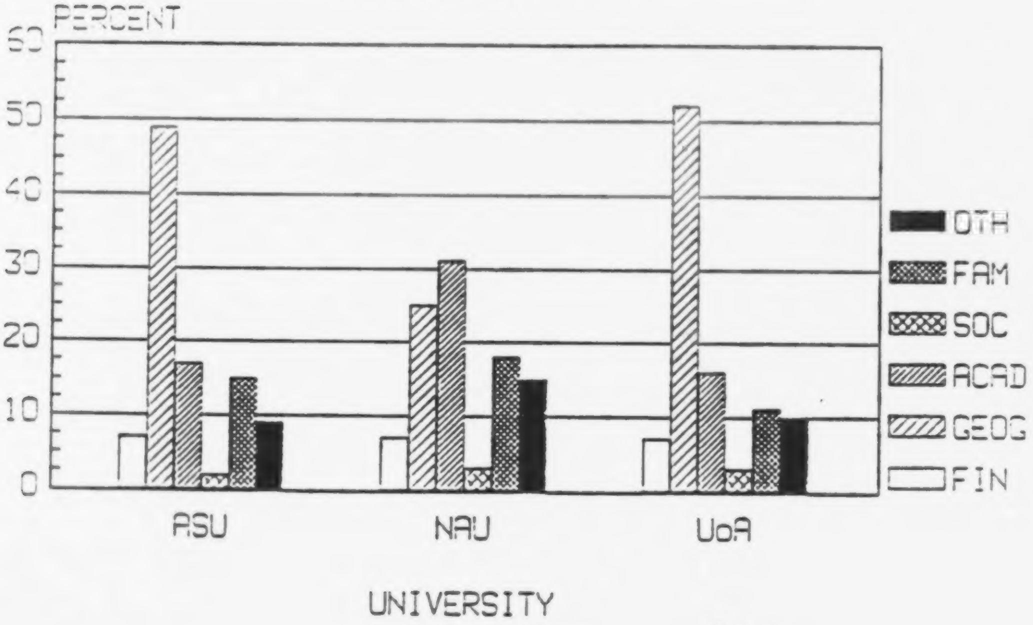

VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY

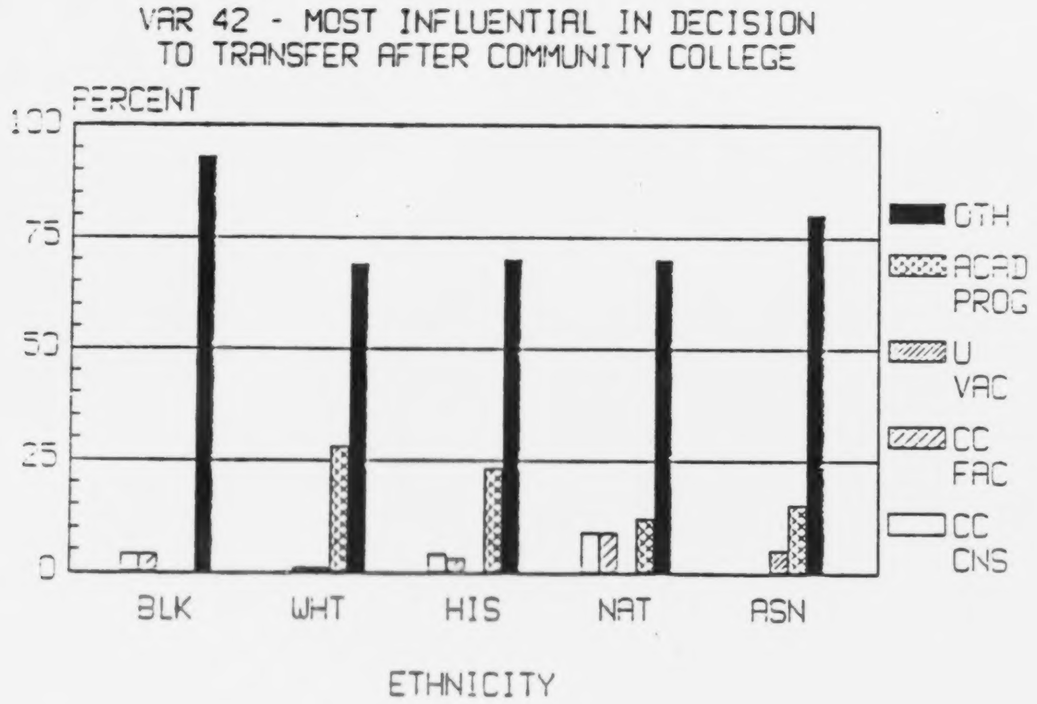

VAR 43 - REASON FOR TRANSFER TO THIS UNIVERSITY

VAR 39 - ATTENDED ANOTHER COLLEGE OR UNIVERSITY

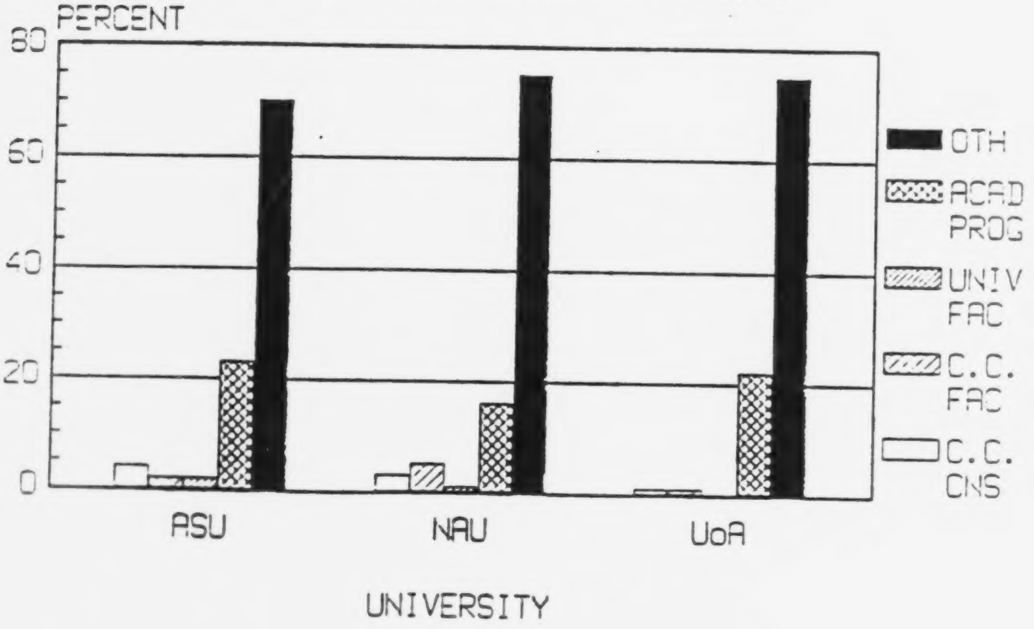


VAR 43 - REASON FOR TRANSFER TO THIS UNIVERSITY





VAR 42 - MOST INFLUENTIAL IN DECISION TO TRANSFER AFTER COMMUNITY COLLEGE



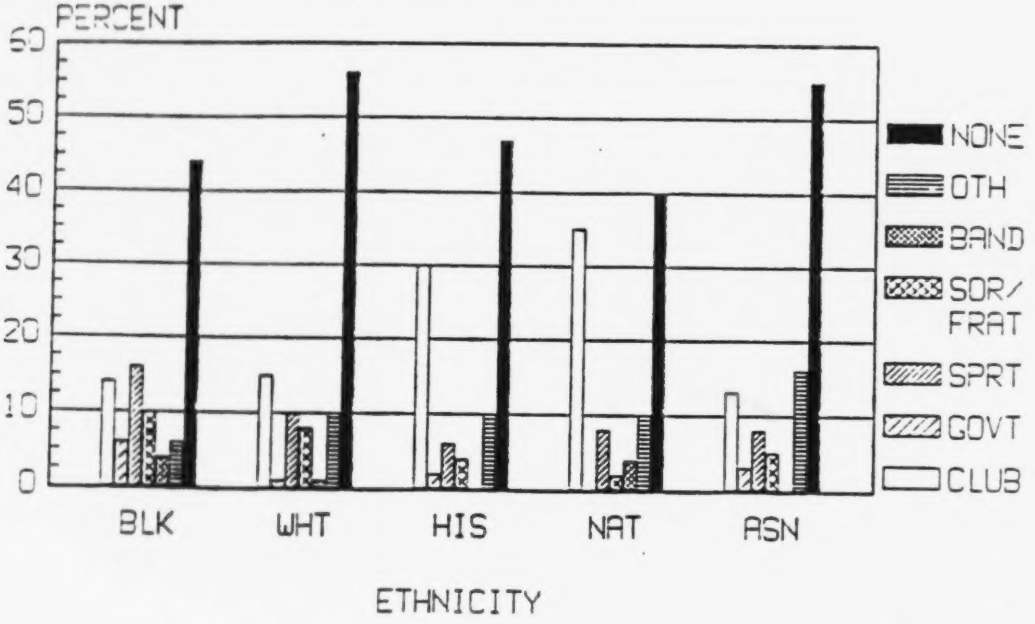
VAR 42 - MOST INFLUENTIAL IN DECISION TO TRANSFER AFTER COMMUNITY COLLEGE

APPENDIX F

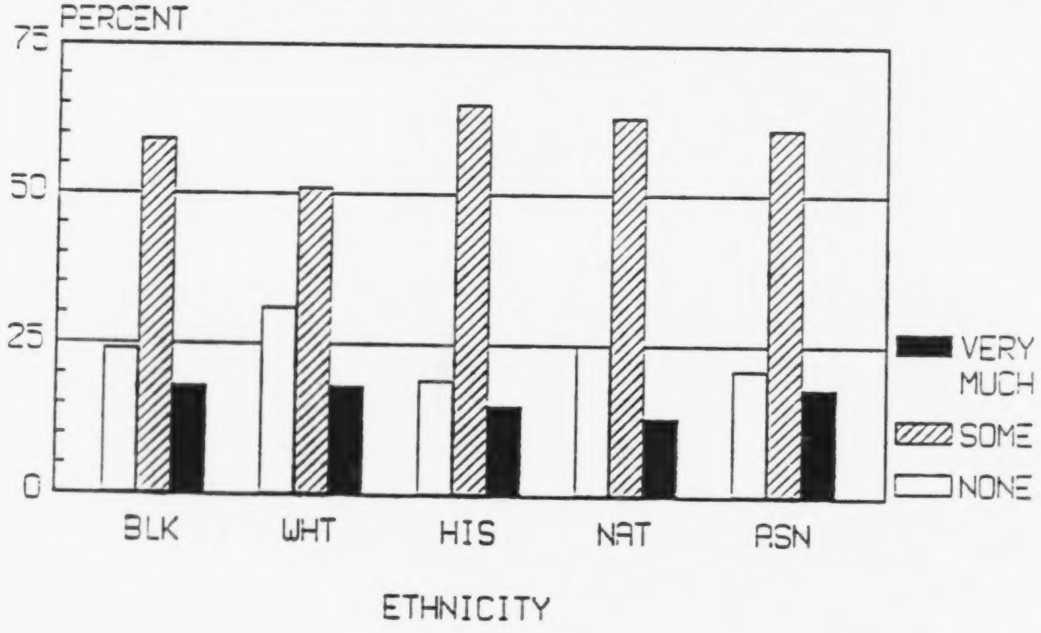
CAMPUS ACTIVITIES

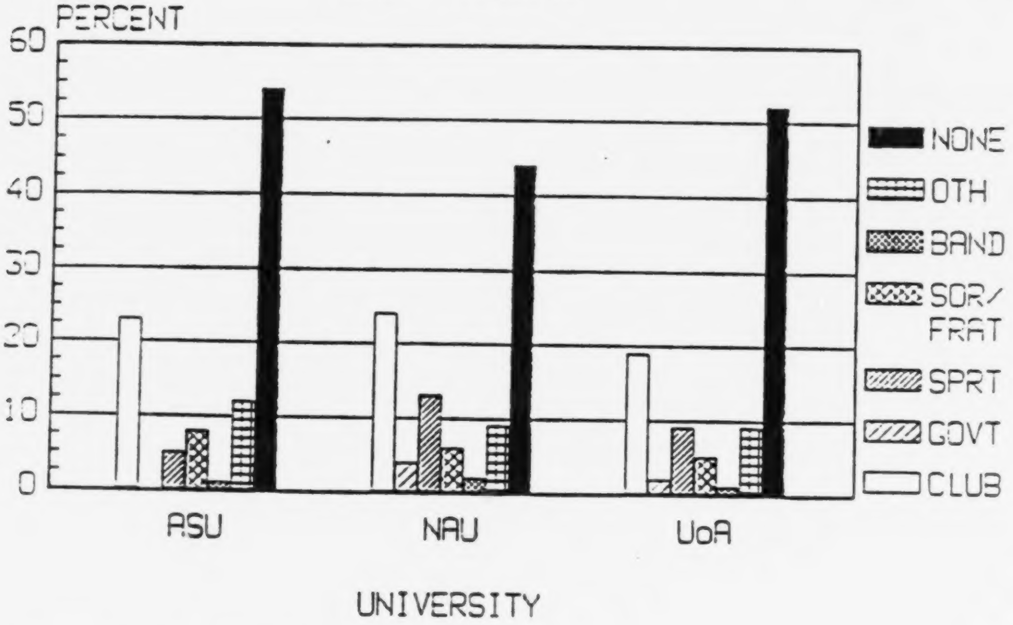
Interestingly, only a few students participate in campus activities (Var 44) and more than half of the respondents indicated that extracurricular activities do not reflect their interests (Var 45) nor do they participate in ethnic student activities (Var 46).

VAR 44 - CAMPUS ACTIVITY IN WHICH MOST INVOLVED

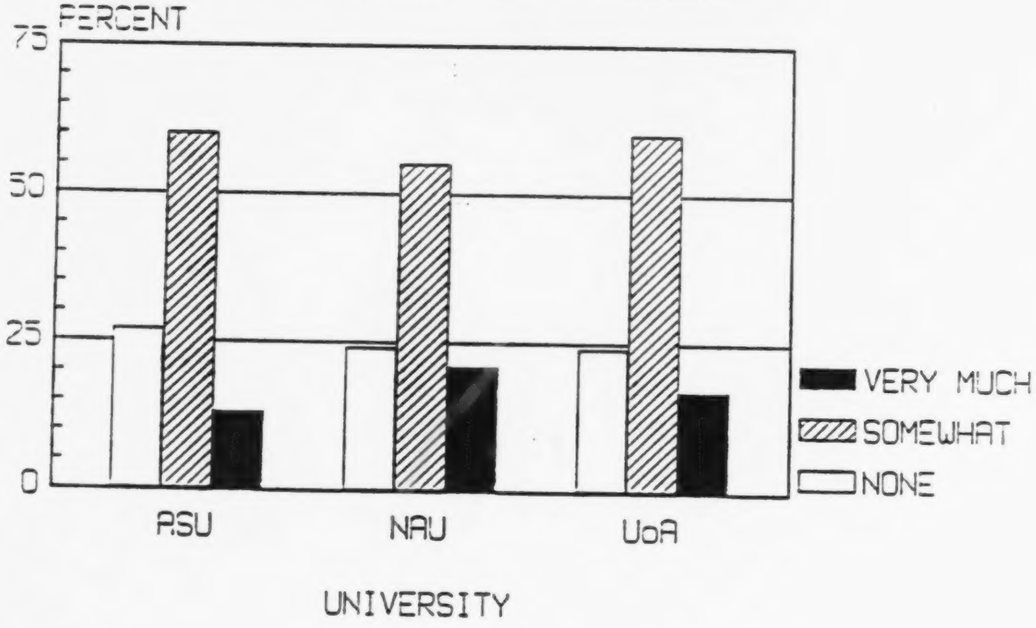


VAR 45 - EXTENT EXTRACURRICULAR ACTIVITIES REFLECT YOUR INTERESTS

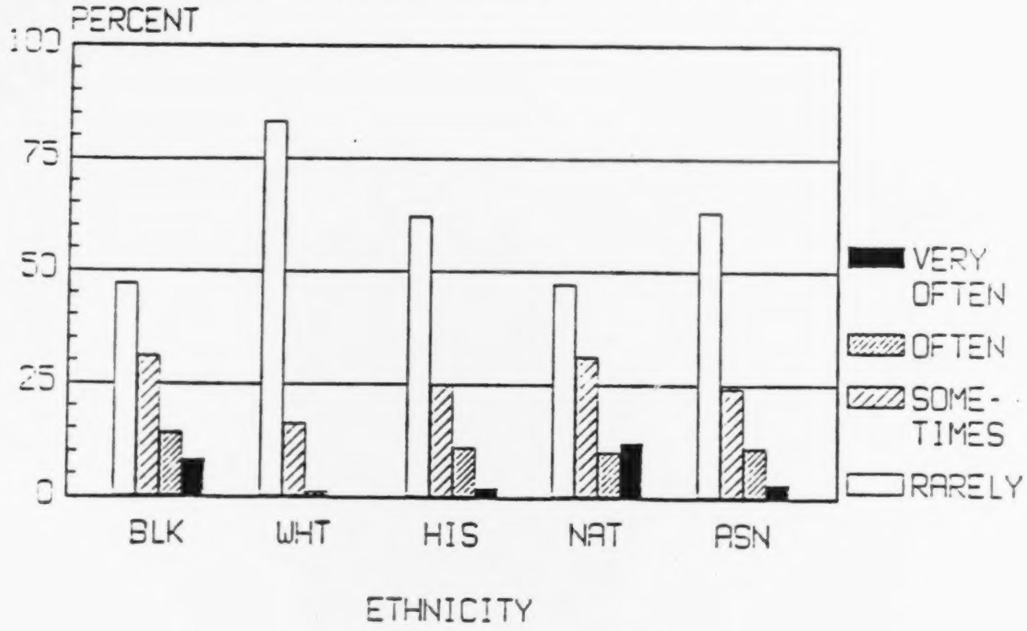




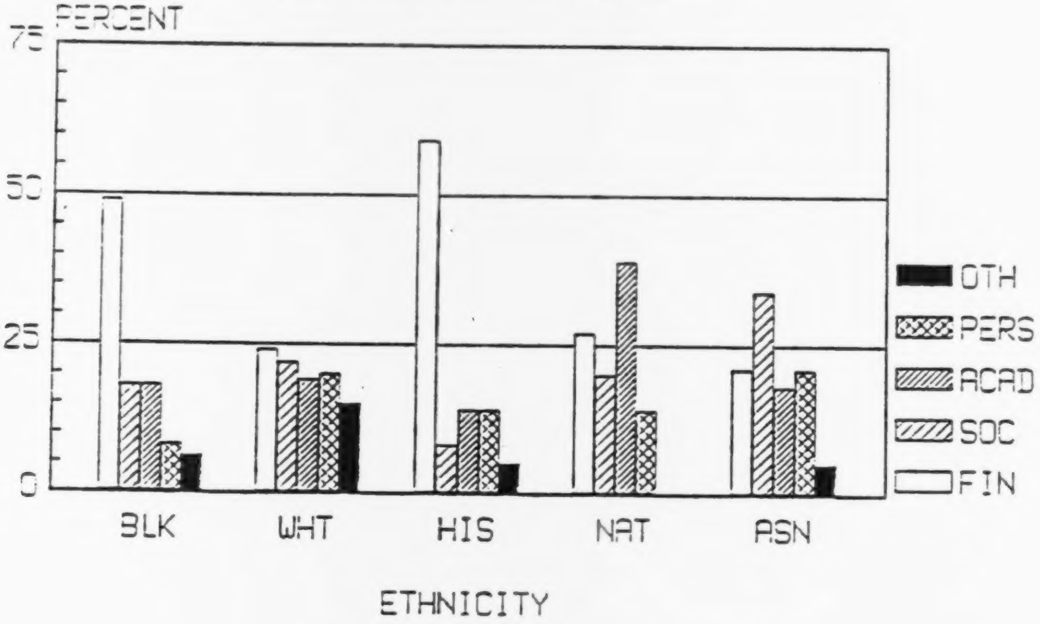
VAR 44 - CAMPUS ACTIVITY IN WHICH MOST INVOLVED



VAR 45 - EXTENT EXTRACURRICULAR ACTIVITIES REFLECT YOUR INTERESTS



VAR 46 - PARTICIPATION IN ETHNIC STUDENT EXTRACURRICULAR ACTIVITIES



VAR 47 - MOST SERIOUS PROBLEM FOR MINORITY STUDENTS

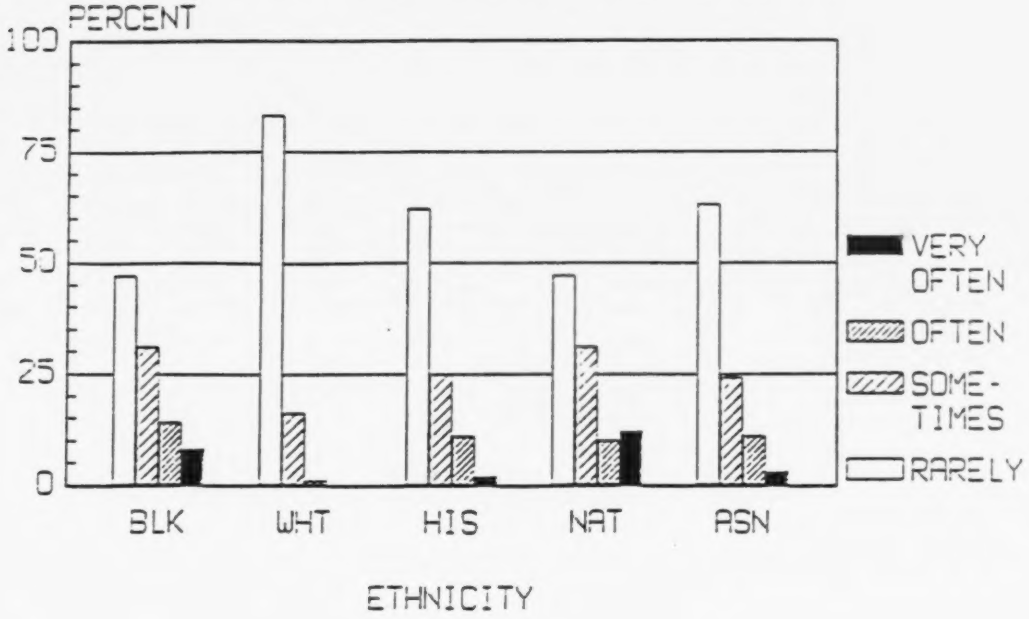
APPENDIX G

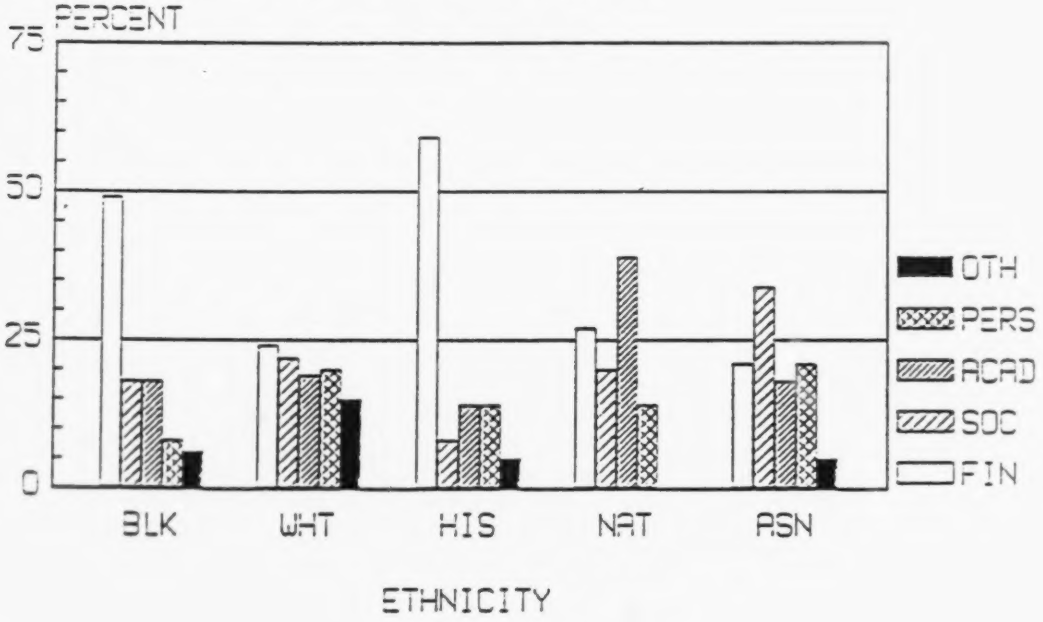
FINANCIAL AID

1. Black and Hispanic respondents cite finances as the major problem for minority students (Var 47) whereas academic and social problems are significant for Native Americans and Asians respectively. When grouped by university, financial problems are by far the major problems at all three universities.

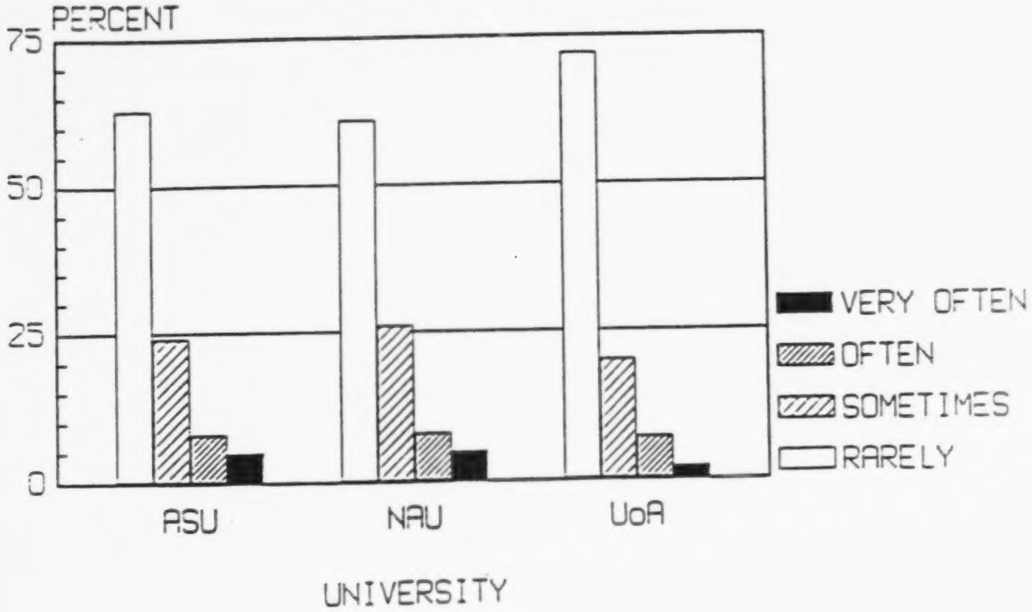
2. Almost three-fourths of all students regardless of ethnicity and university have sought aid from the office of Financial Aid (Var 48). However, the helpfulness of this assistance is variable between ethnic groups. The UA received the lowest marks for providing assistance and NAU the highest.

3. With regard to sources of finances within the family, parents and the student are the major sources (Var 50), academic scholarships are most common (Var 51), and a combination of grants and loans are most prevalent (Var 52). For those students who work, employment is mostly off-campus, except at NAU (Var 53). The most common number of hours is 16-20, except for Asians who work 21-30 hours. The 16-20 hour interval is most common at NAU and UA, but 21-30 is most common at ASU.

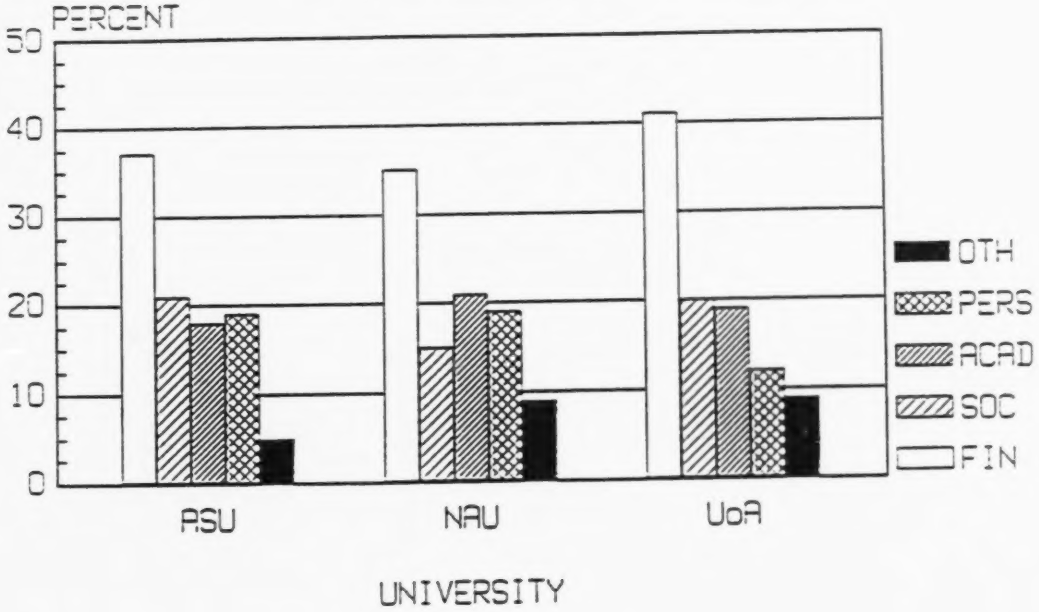

VAR 46 - PARTICIPATION IN ETHNIC STUDENT EXTRACURRICULAR ACTIVITIES

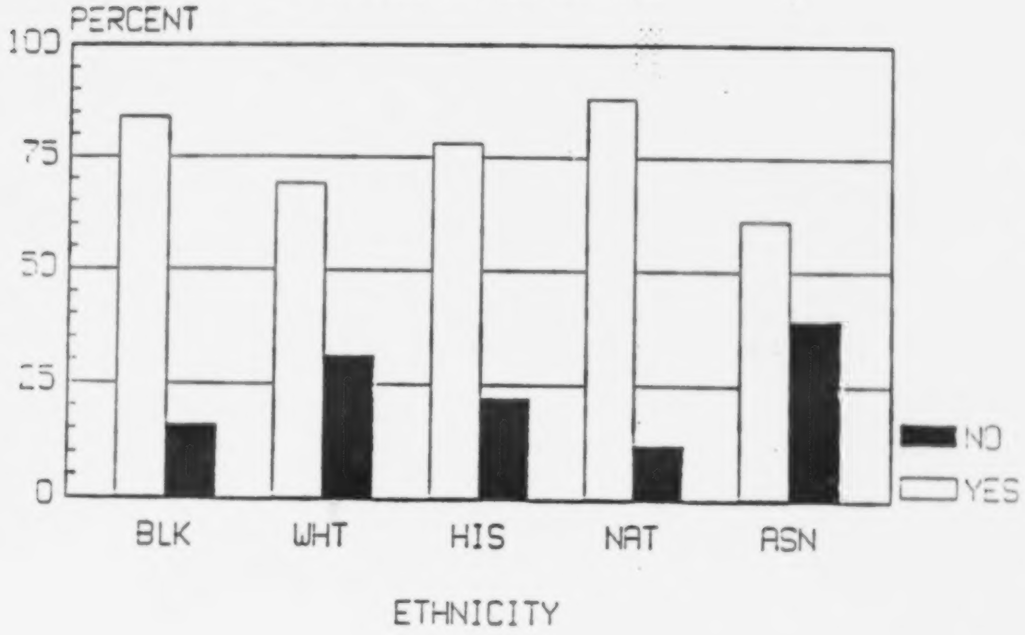

VAR 47 - MOST SERIOUS PROBLEM FOR MINORITY STUDENTS

VAR 46 - PARTICIPATION IN ETHNIC STUDENT EXTRACURRICULAR ACTIVITIES

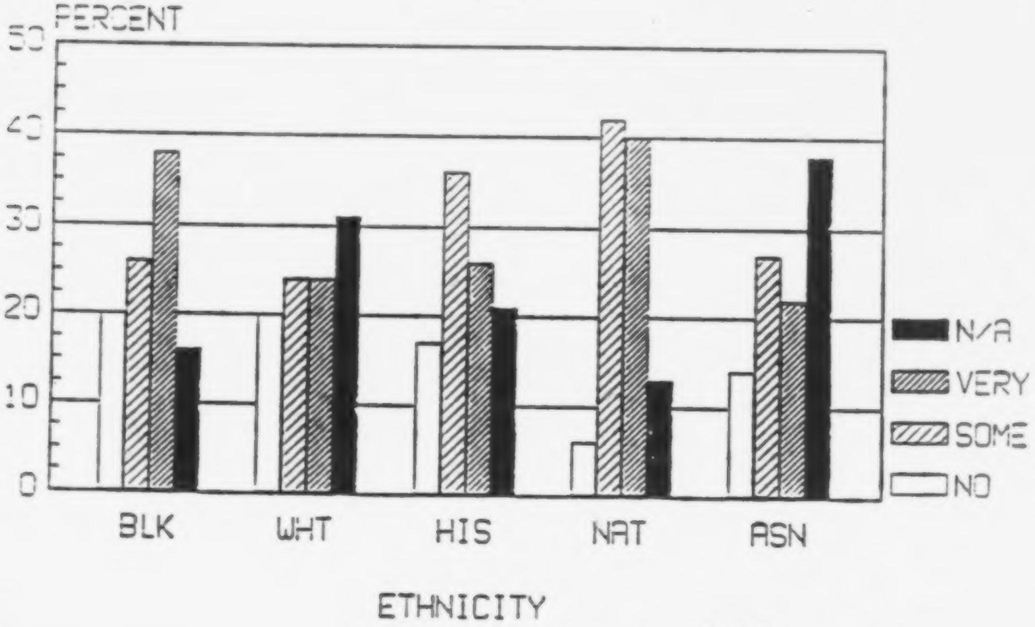


VAR 47 - MOST SERIOUS PROBLEM FOR MINORITY STUDENTS



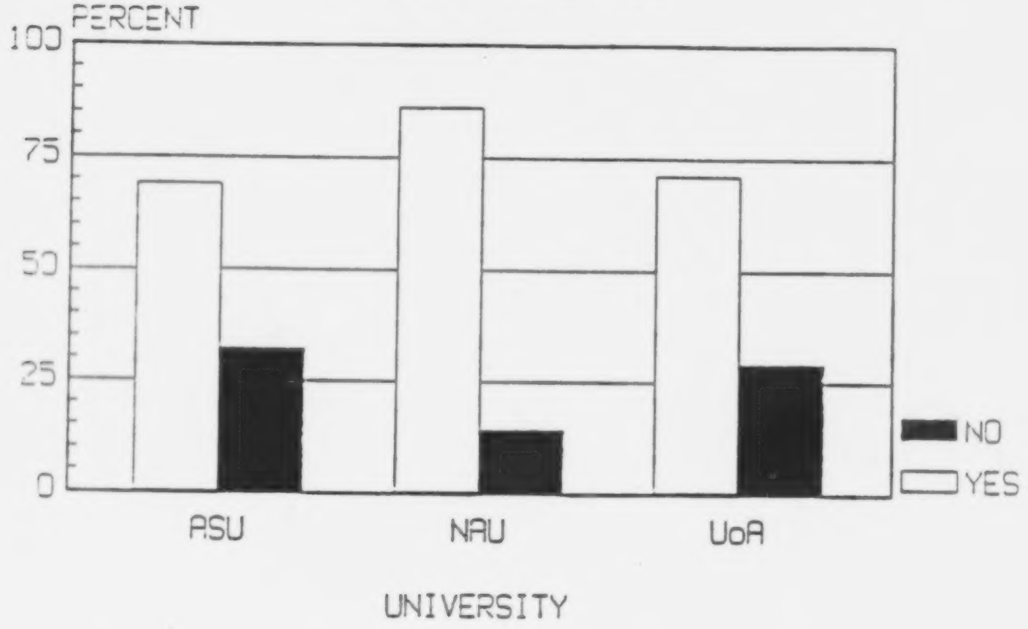


VAR 48 - SOUGHT ASSISTANCE FROM FINANCIAL AID OFFICE

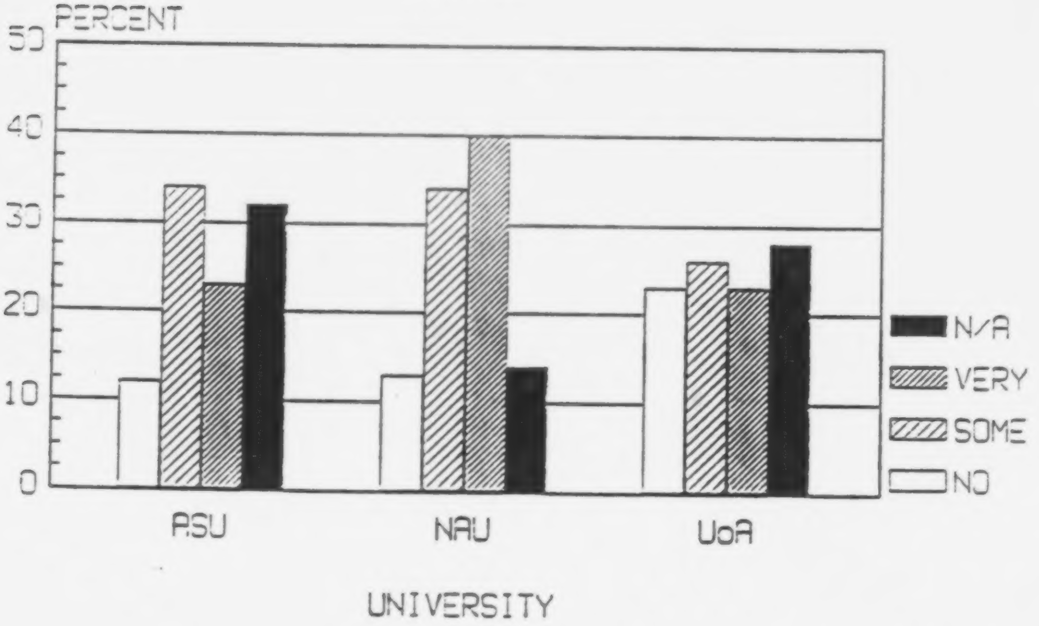


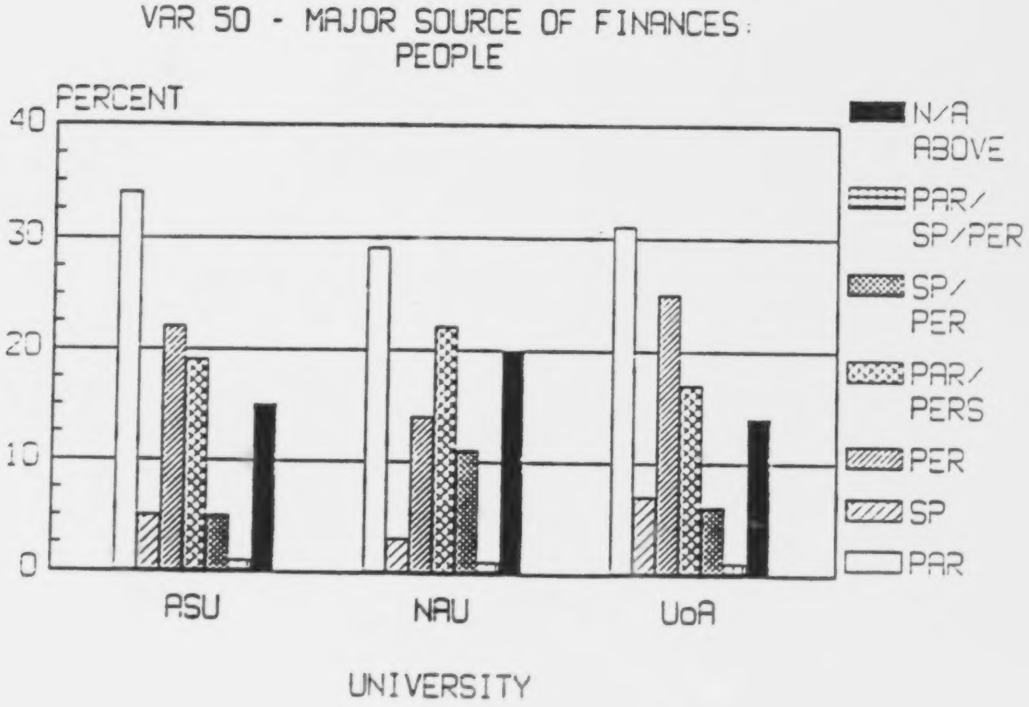
VAR 49 - HELPFULNESS OF FINANCIAL AID OFFICE

VAR 48 - SOUGHT ASSISTANCE FROM FINANCIAL AID OFFICE

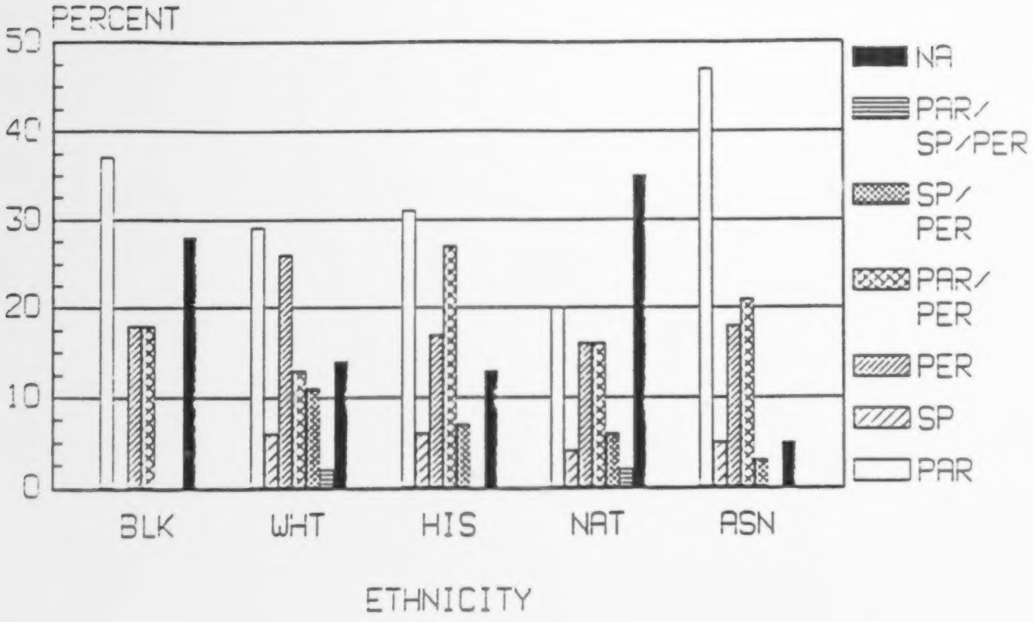


VAR 49 - HELPFULNESS OF FINANCIAL AID OFFICE

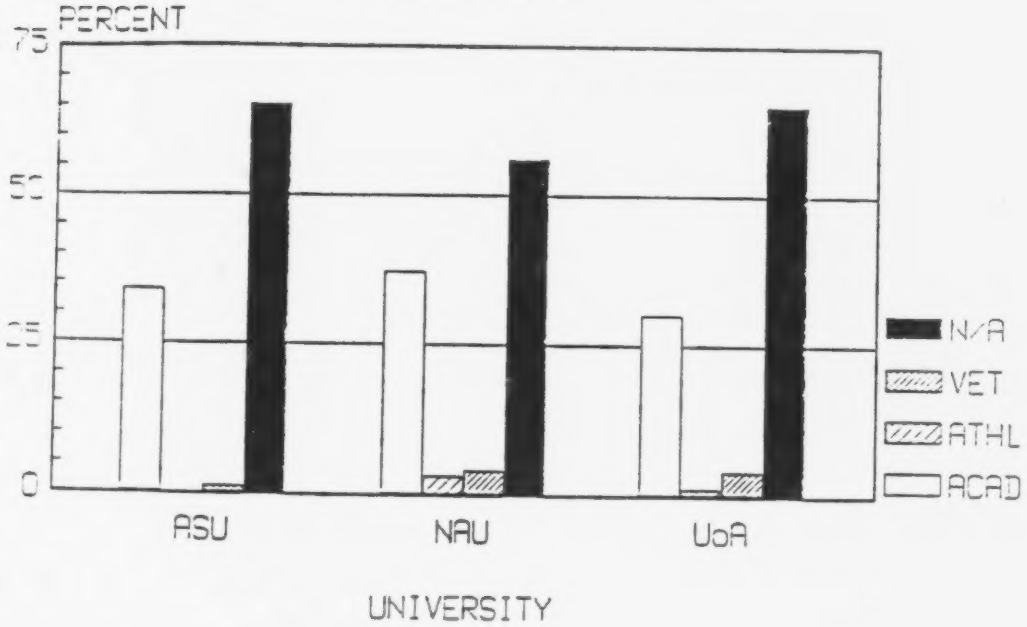



VAR 50 - MAJOR SOURCE OF FINANCES:
PEOPLE
PERCENT
40
30
20
10
0
ASU
NAU
UoA
UNIVERSITY
N/A
ABOVE
PAR/
SP/PER
SP/
PER
PAR/
PERS
PER
SP
PAR

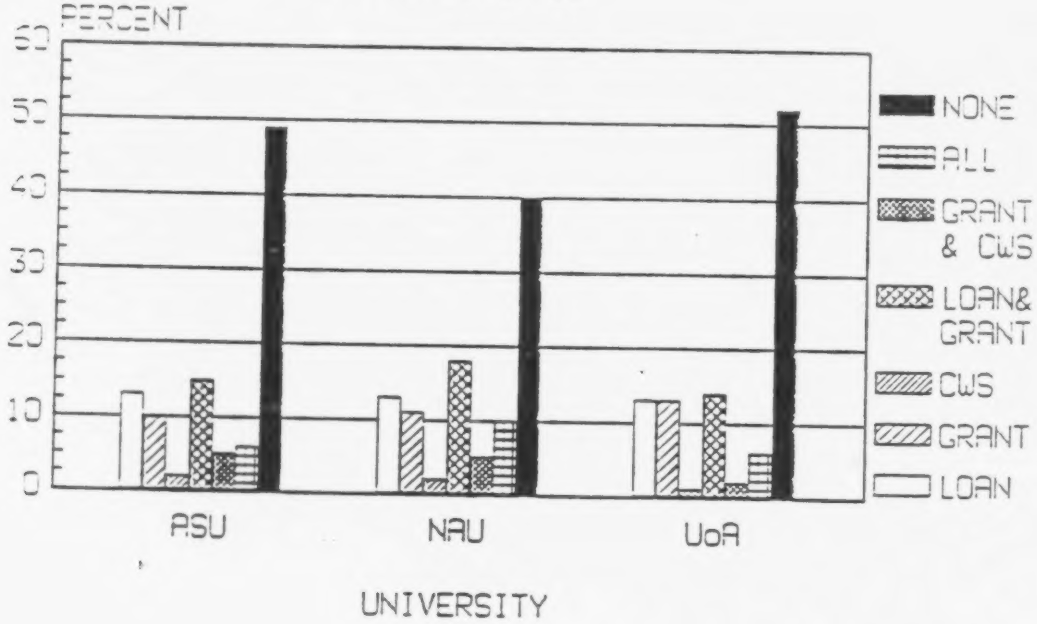
VAR 50 - MAJOR SOURCE OF FINANCES:
PEOPLE



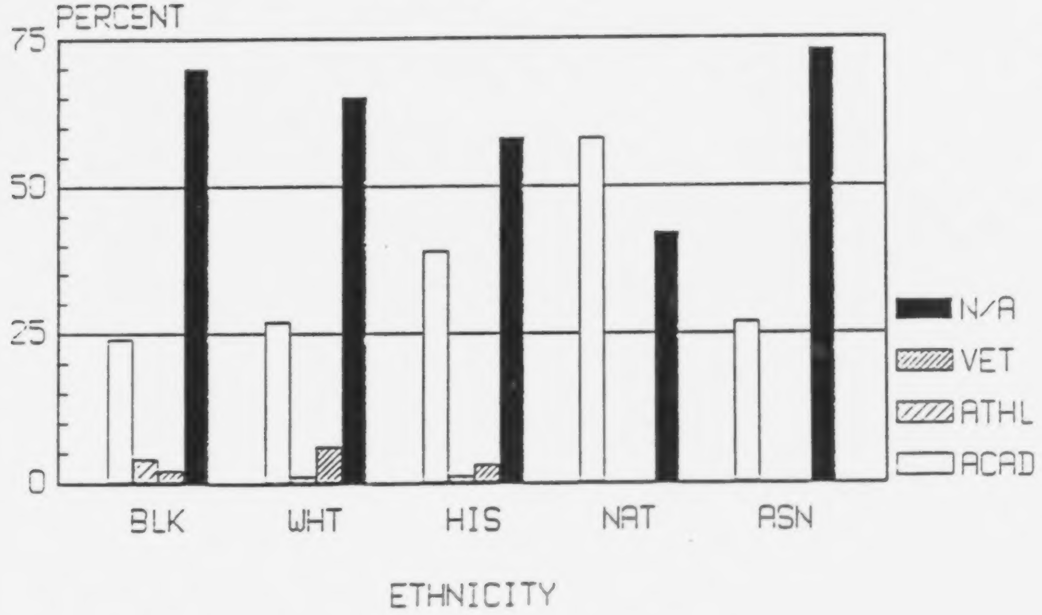
VAR 51 - MAJOR SOURCE OF FINANCES:
SCHOLARSHIPS



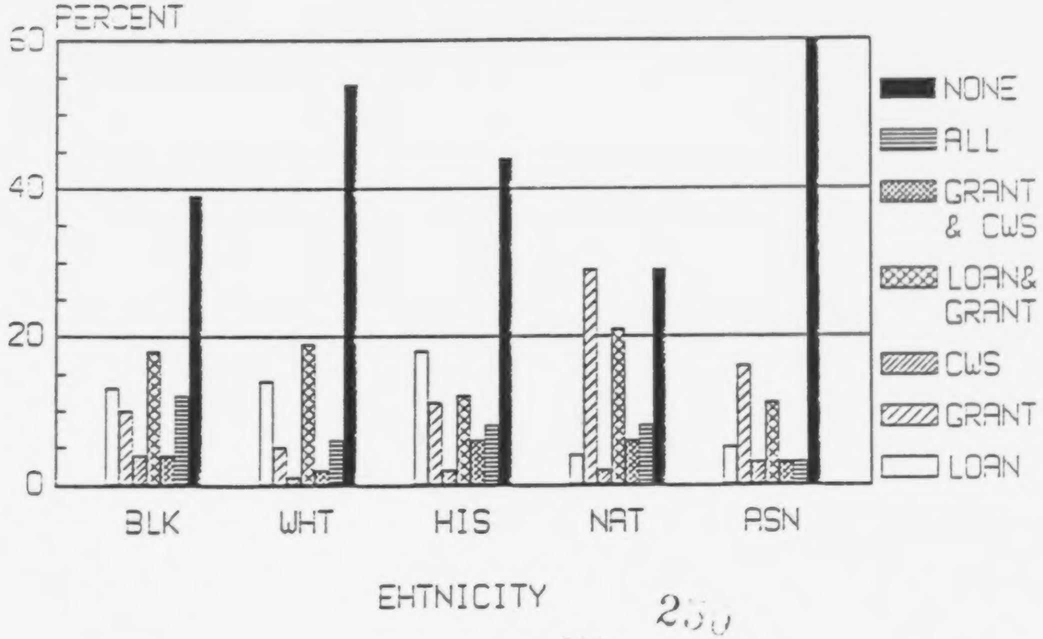
VAR 52 - MAJOR SOURCE OF FINANCES:
FINANCIAL AID



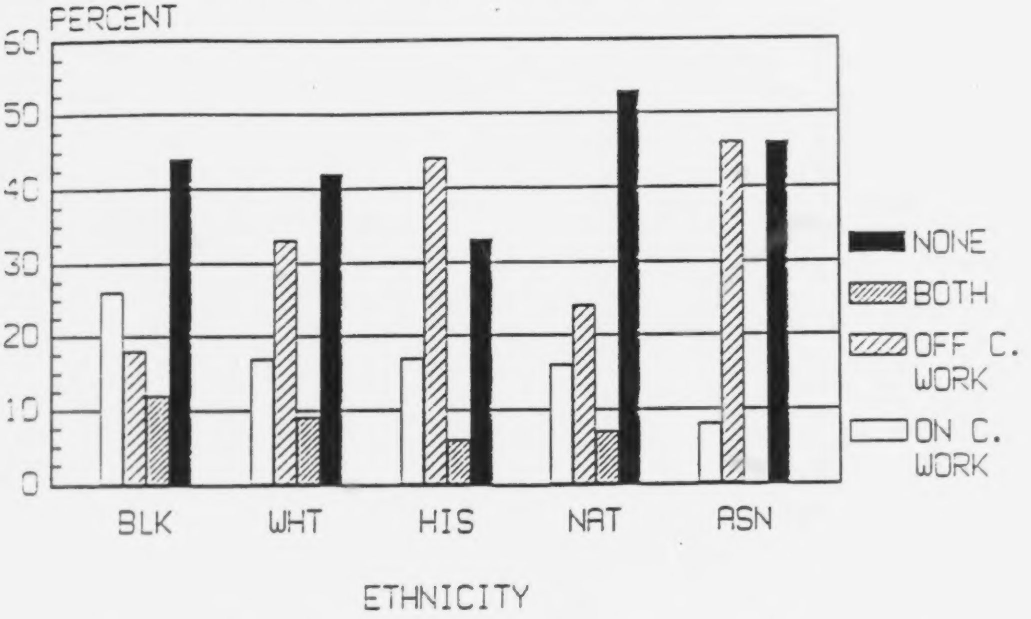
VAR 51 - MAJOR SOURCE OF FINANCES:
SCHOLARSHIPS



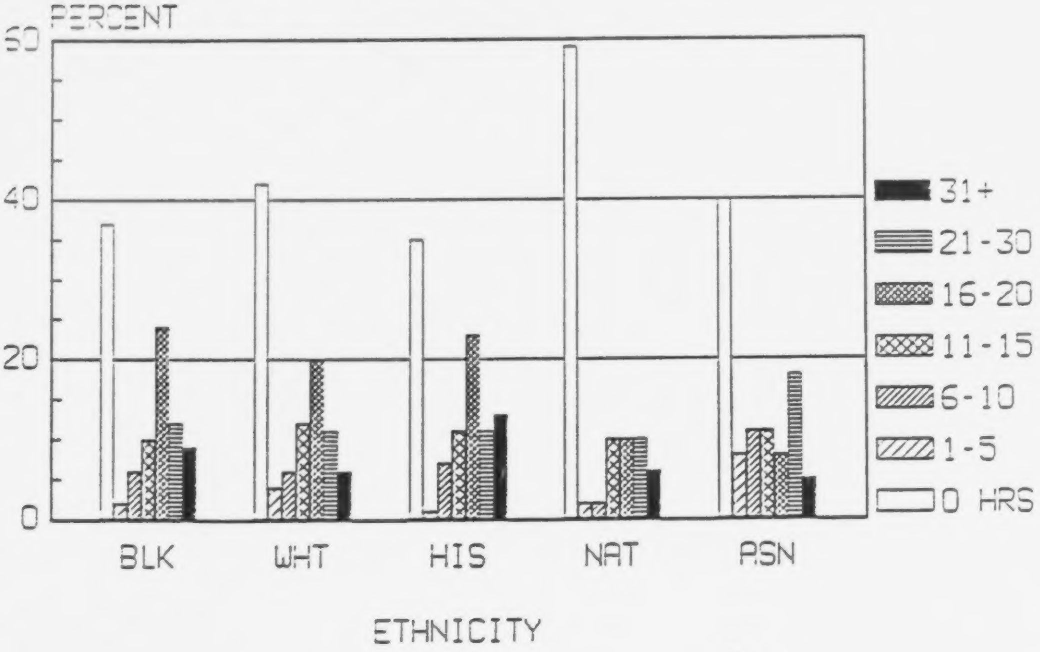
VAR 52 - MAJOR SOURCE OF FINANCES:
FINANCIAL AID



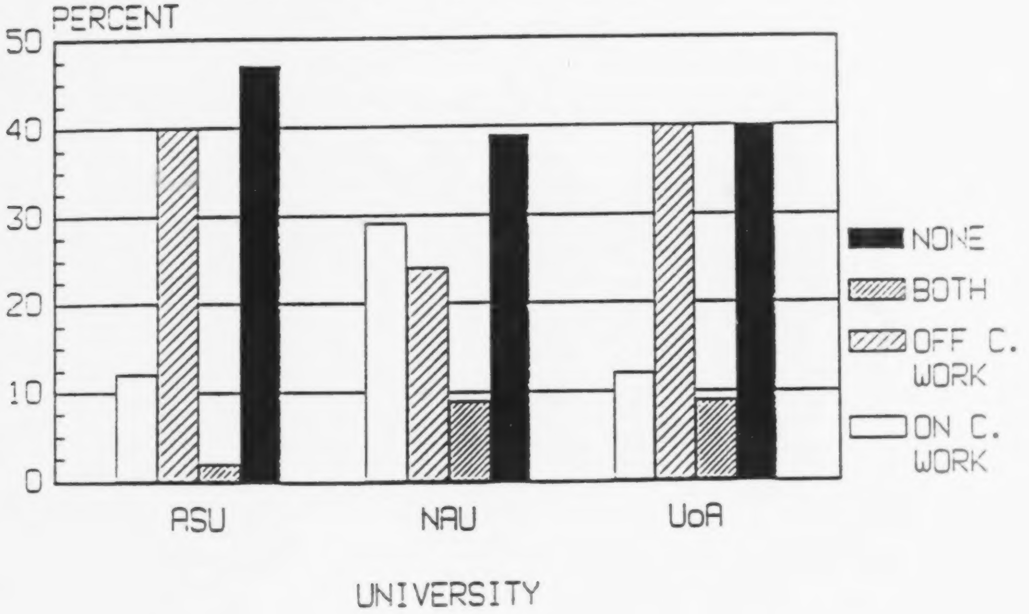
VAR 53 - MAJOR SOURCE OF FINANCES:
ON CAMPUS, OFF CAMPUS WORK



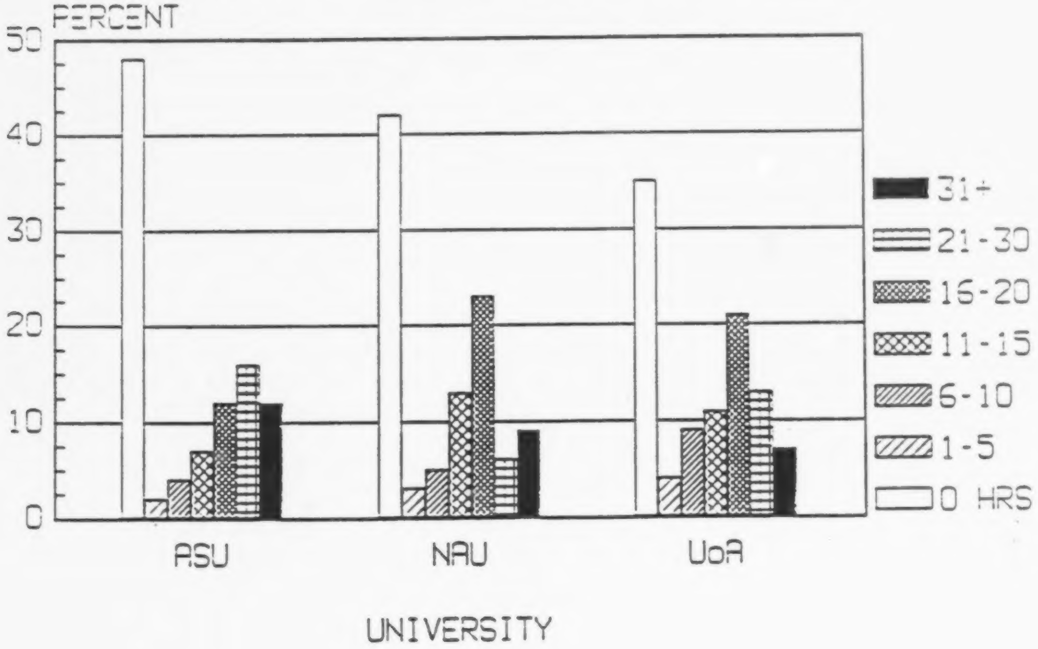
VAR 54 - HOURS WORKED PER WEEK



VAR 53 - MAJOR SOURCE OF FINANCES:
ON CAMPUS, OFF CAMPUS WORK



VAR 54 - HOURS WORKED PER WEEK



APPENDIX H

CAMPUS SUPPORT - ACADEMIC AND SOCIAL

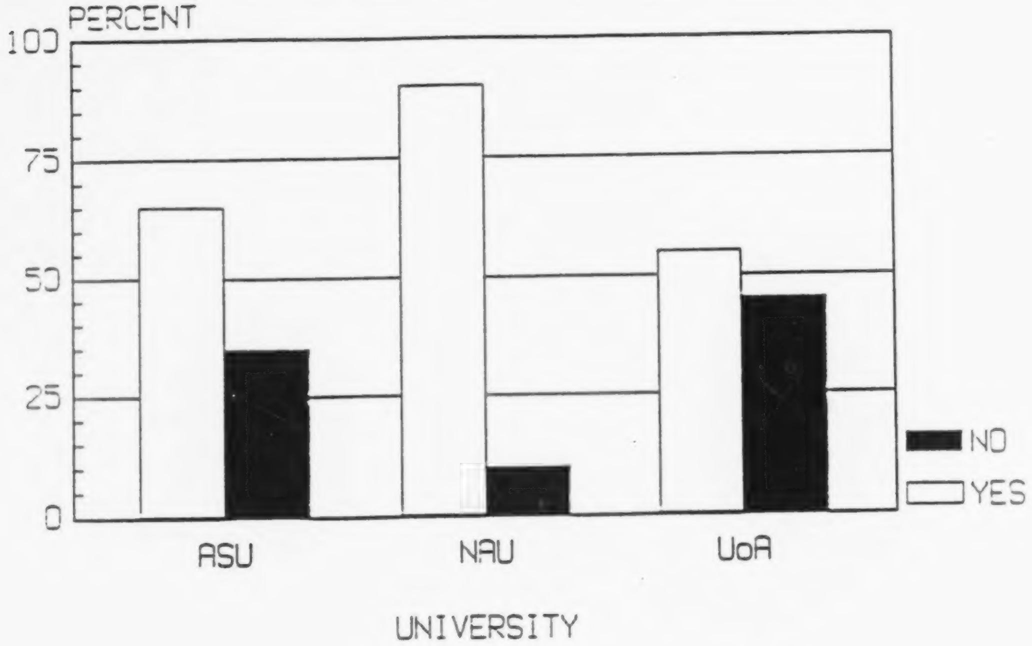
1. Among ethnic groups, Blacks are most likely to have an academic advisor for program assistance and Asians are least likely (Var 55). At the three universities, academic advisors are more likely to be available at NAU and less likely at the UA and ASU. If students meet with advisors, they do so about one to two times a semester at UA and ASU and somewhat more at NAU (Var 56).

2. When students have a personal problem, the overwhelming majority go to family and friends, or to no one, especially at ASU and UA, somewhat less so at NAU (Var 57). More than three-fourths of the respondents do not seek help from the counseling services at any of the universities (Var 58), but of those who did, Whites and Hispanics found the most help and Native Americans the least (Var 59). Of the universities, NAU provided the most help.

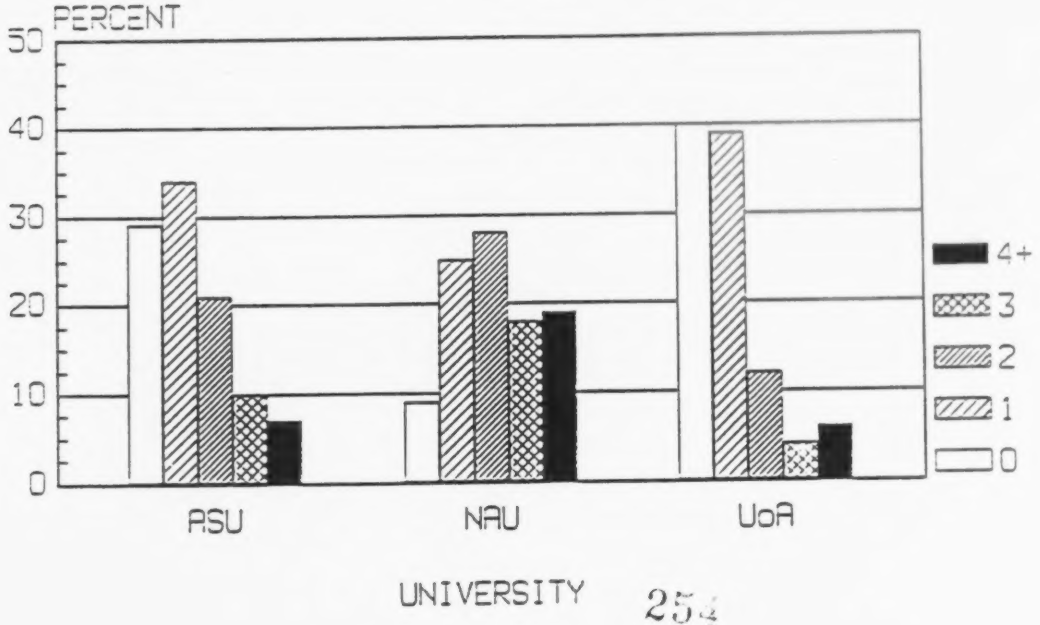
3. When students have academic problems, professors and classmates are generally the most helpful (Var 60), but Blacks and Native Americans make some use of tutorial services. Interestingly, Asians find as much help from friends as from classmates and Native Americans cite no one most. Within the universities, professors at the UA are the greatest source of academic help. The quality of professorial assistance (Var 61) is generally high as reported by all ethnic groups and is highest at UA. Interaction with professors (Var 64) is warm and professional but with some variation between ethnic groups and more so between universities, ASU and UA being distinctly different with NAU somewhere in between. Frequency of academic interaction with professors (Var 65) was cited as seldom or rare by most ethnic groups and Blacks cited none most often. At the three universities the responses are inconclusive, but are generally less than favorable.

4. With regard to non-professorial assistance, interaction with university personnel (Var 62) is less favorable than with professors and among all ethnic groups, less than 25% of the respondents make use of tutorial services (Var 63).

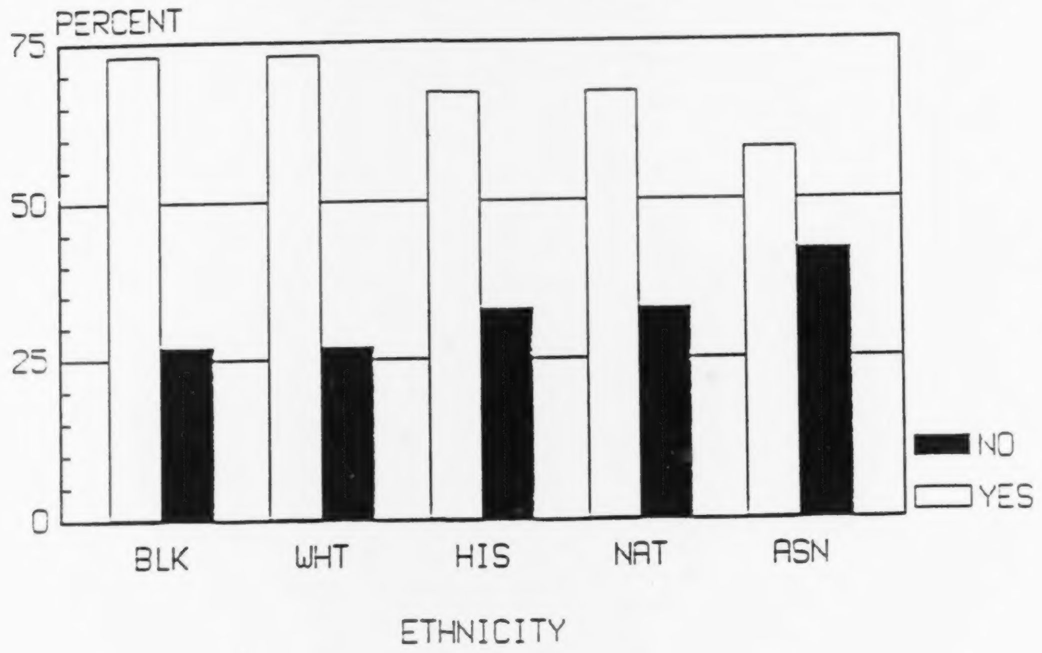
VAR 55 - ACADEMIC ADVISOR



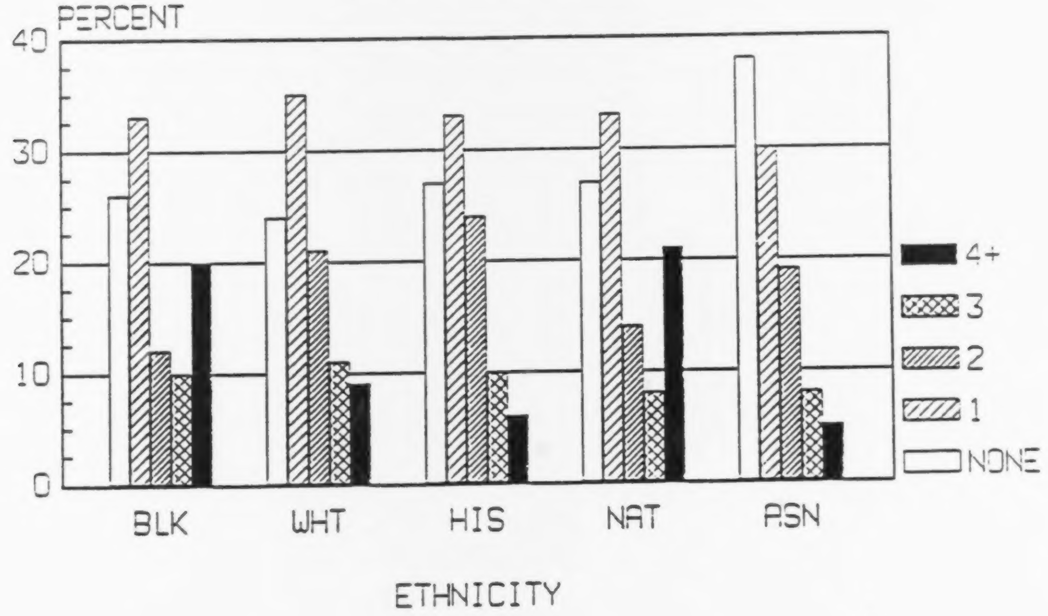
VAR 56 - MEETINGS WITH ADVISOR PER SEMESTER

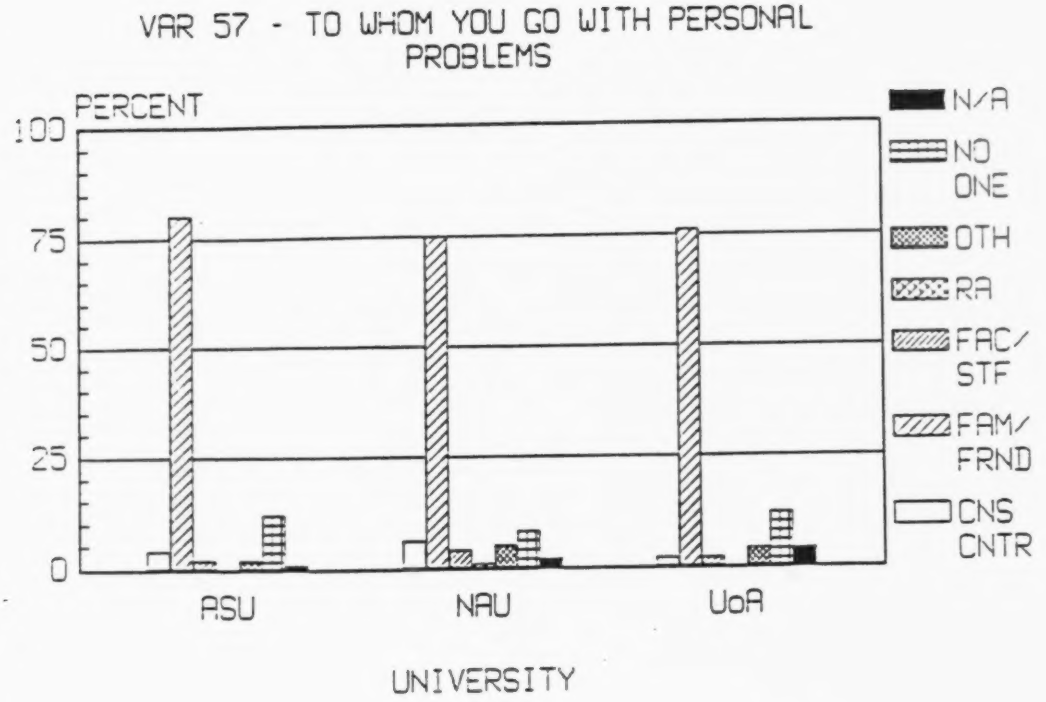


VAR 55 - ACADEMIC ADVISOR

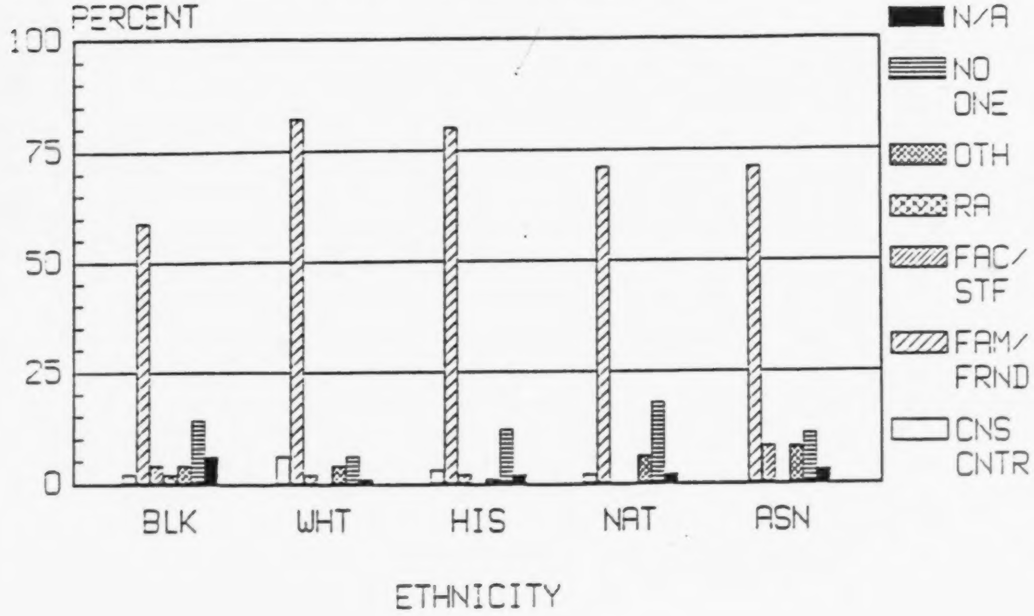


VAR 56 - MEETINGS WITH ADVISOR PER SEMESTER

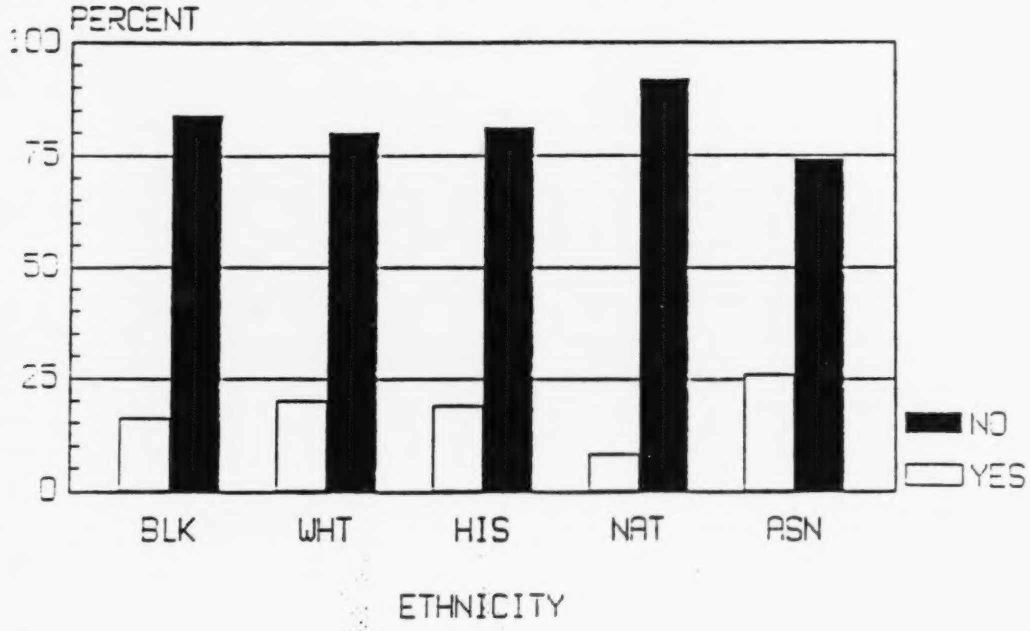



VAR 57 - TO WHOM YOU GO WITH PERSONAL PROBLEMS
PERCENT
100
75
50
25
0
ASU
NAU
UoA
UNIVERSITY
N/A
NO ONE
OTH
RA
FAC/ STF
FAM/ FRND
CNS CNTR

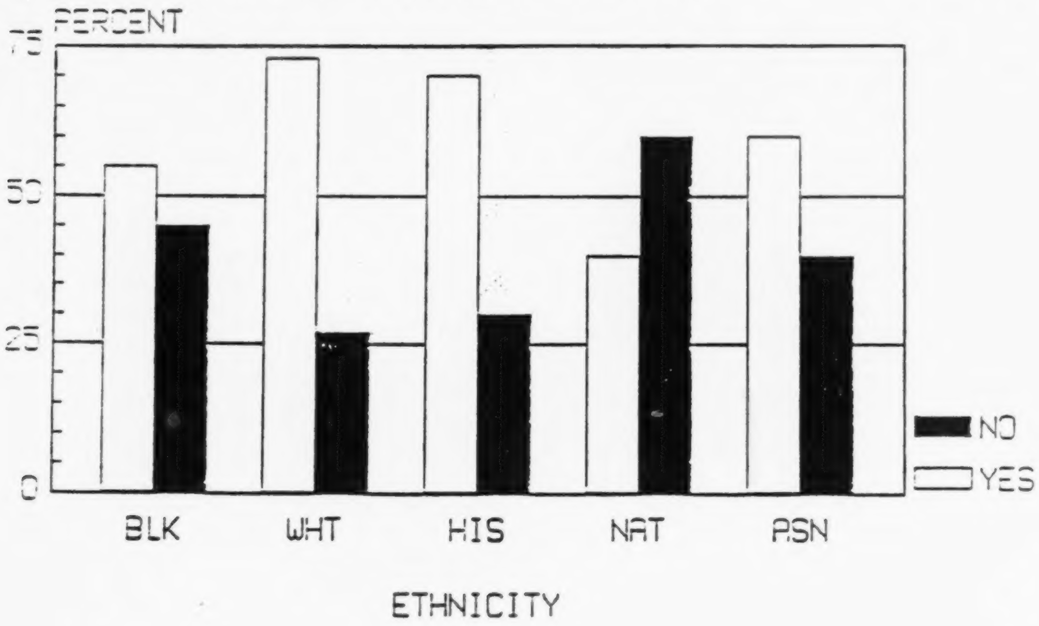
VAR 57 - TO WHOM YOU GO WITH
PERSONAL PROBLEMS



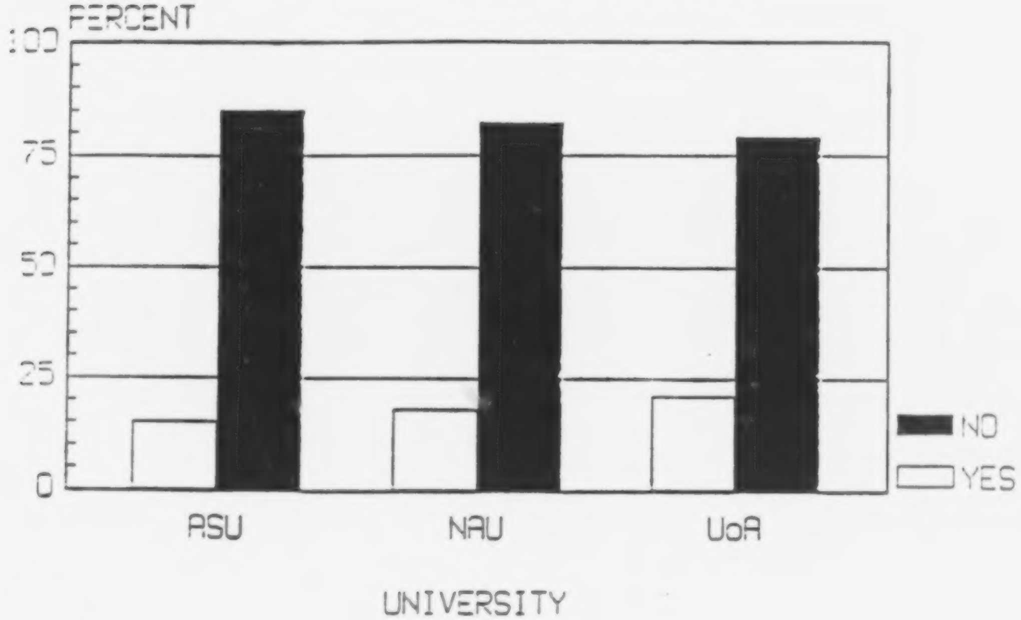
VAR 58 - SOUGHT HELP FROM THE
UNIVERSITY COUNSELING SERVICES



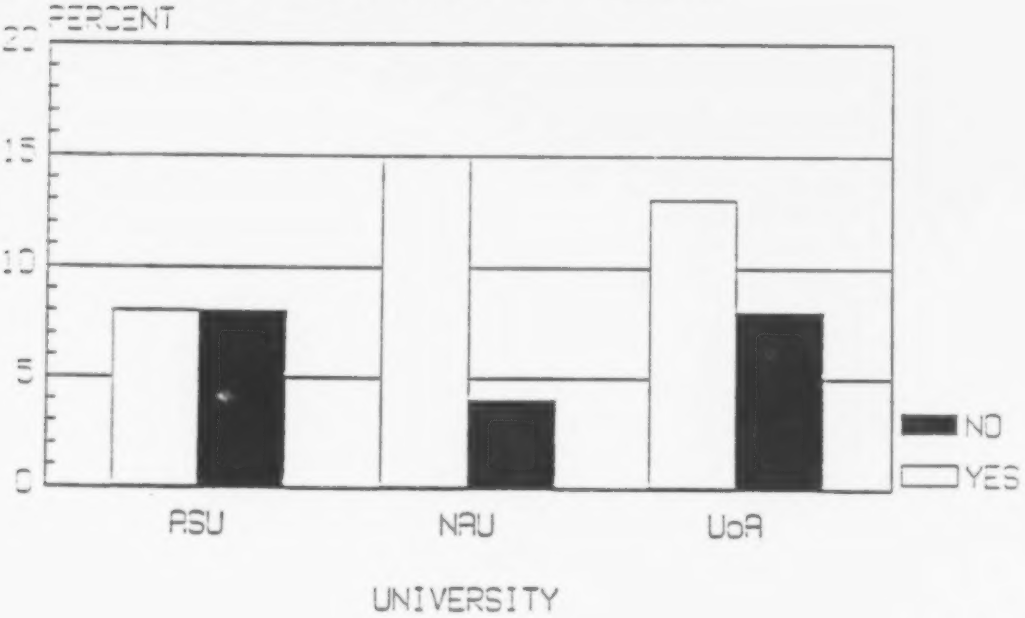
VAR 59 - HELPFULNESS OF COUNSELING
(STUDENTS USING THE SERVICE)



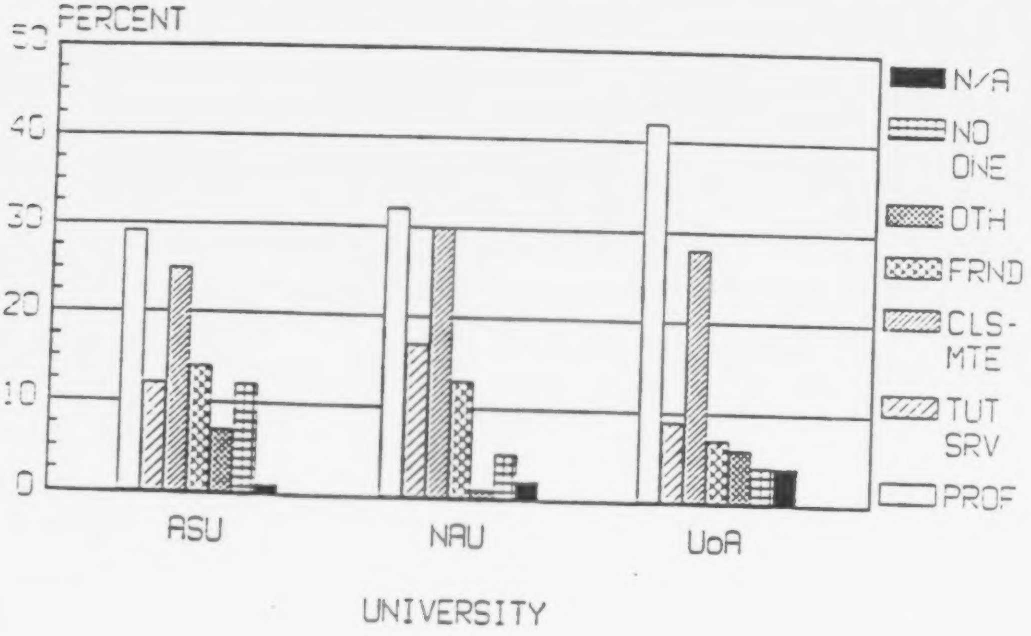
VAR 58 - SOUGHT HELP FROM THE UNIVERSITY COUNSELING SERVICES



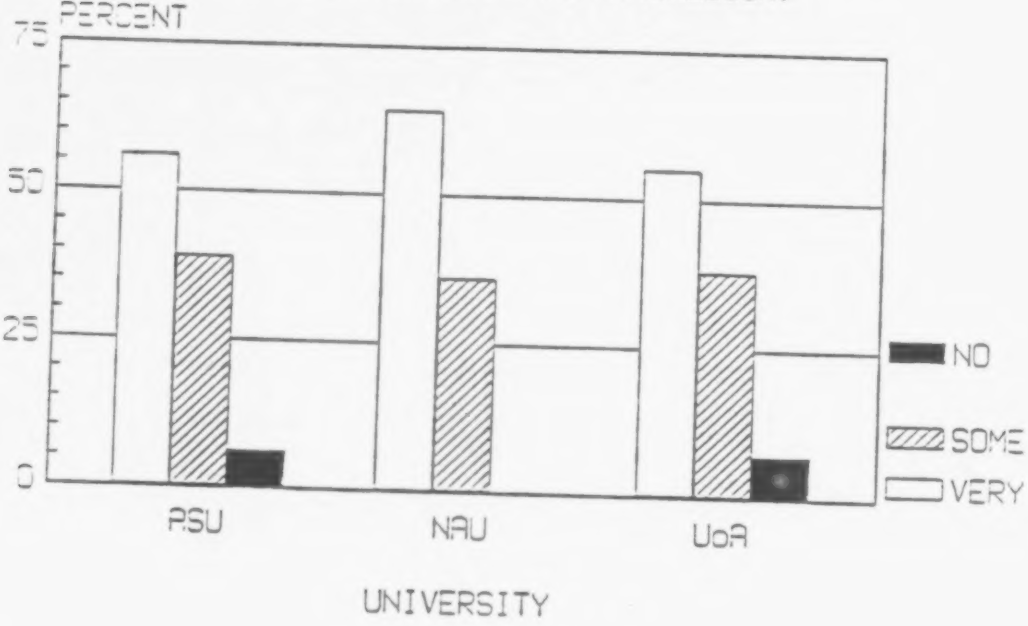
VAR 59 - HELPFULNESS OF COUNSELING (STUDENTS USING THE SERVICE)



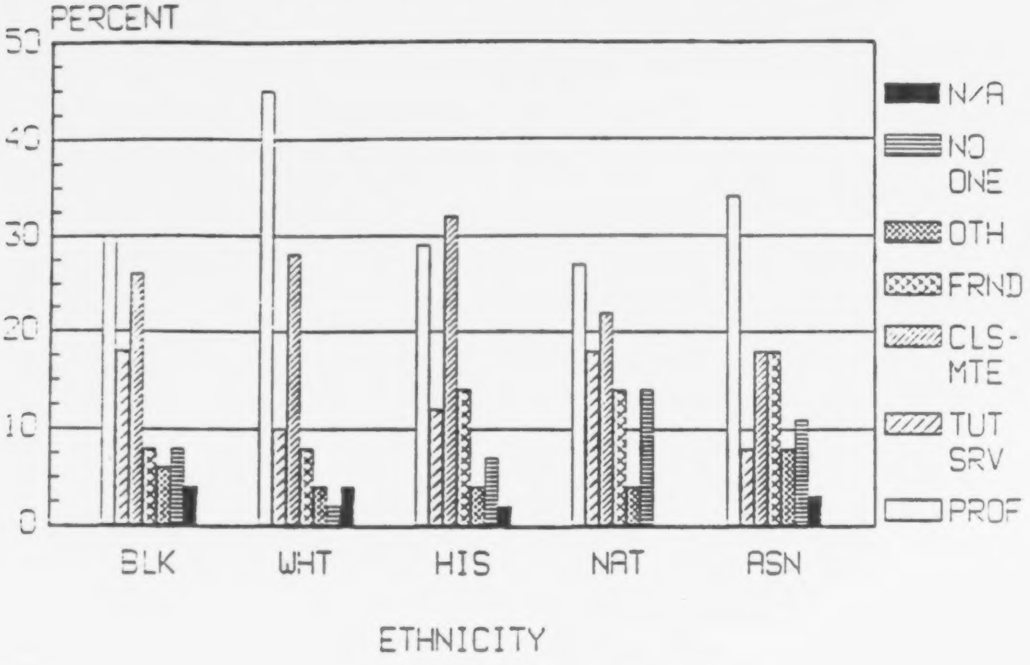
VAR 60 - SOURCE OF HELP/ACADEMIC PROBLEM



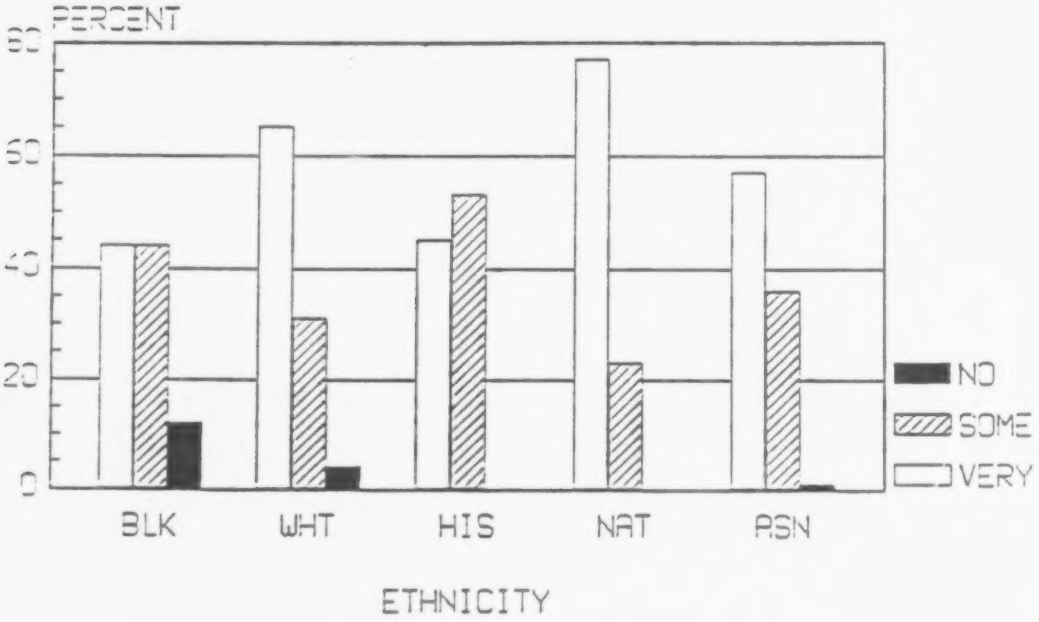
VAR 61 - HELPFULNESS OF PROFESSOR
(THOSE SEEKING HELP FROM PROFESSOR)



VAR 60 - SOURCE OF HELP/ACADEMIC PROBLEM

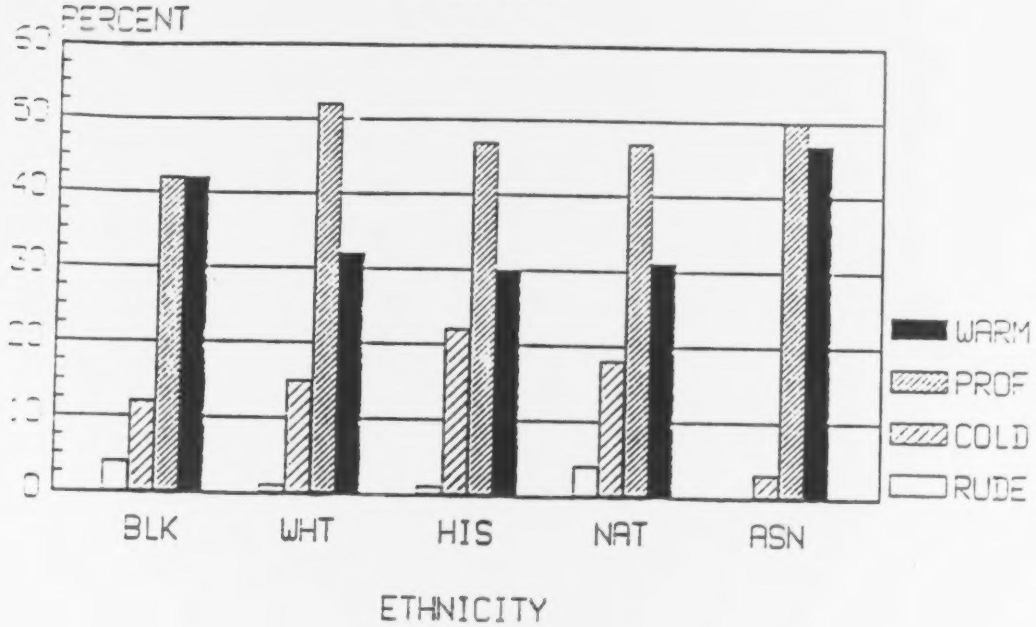


VAR 61 - HELPFULNESS OF PROFESSOR
(THOSE SEEKING HELP FROM PROFESSOR)

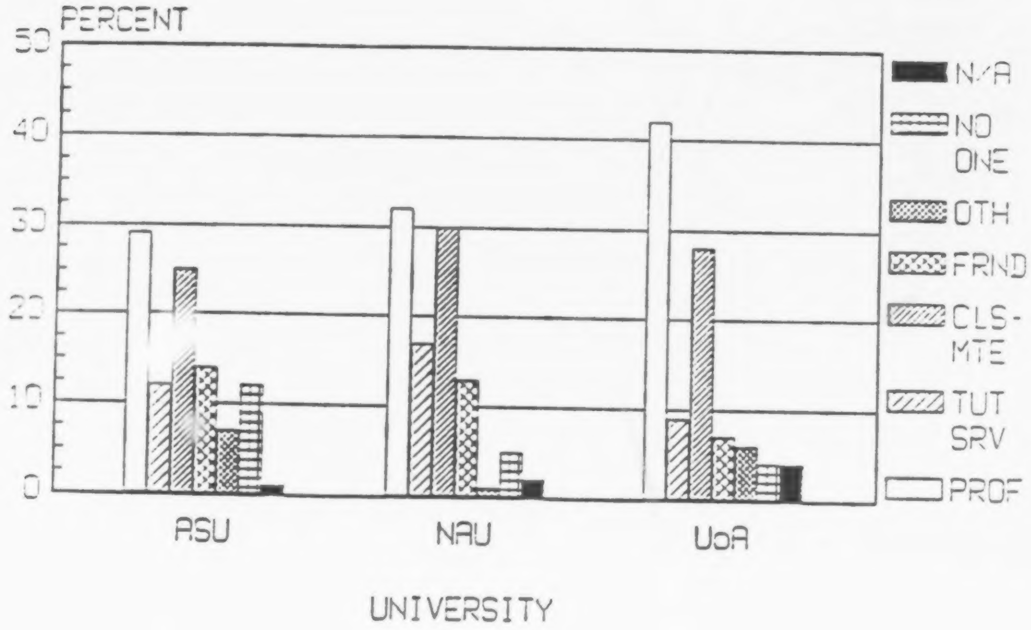


261

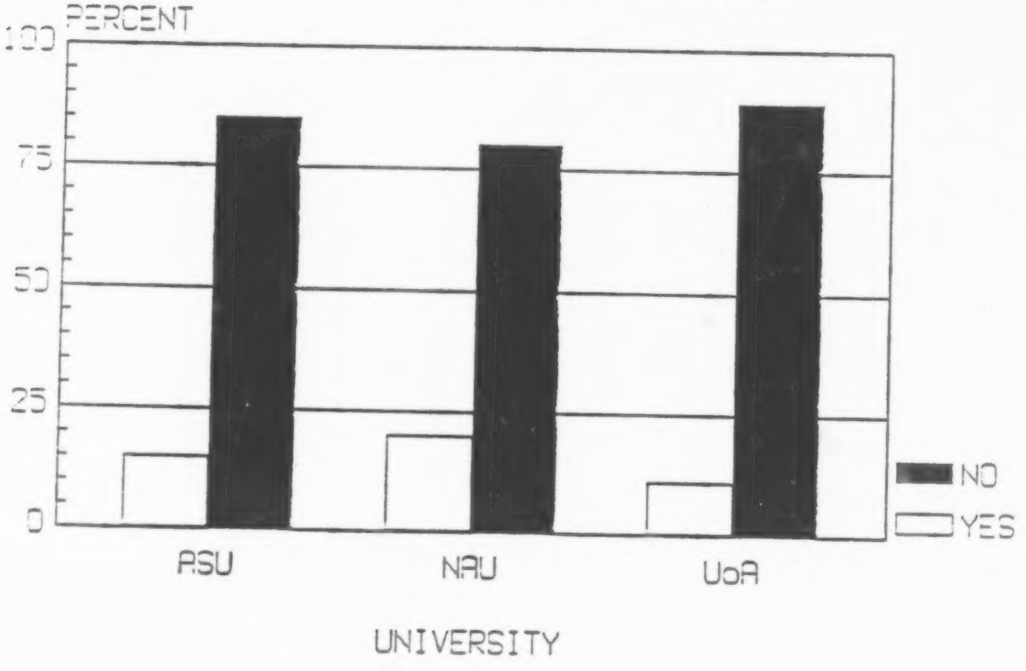
VAR 62 - INTERACTION WITH UNIVERSITY PERSONNEL

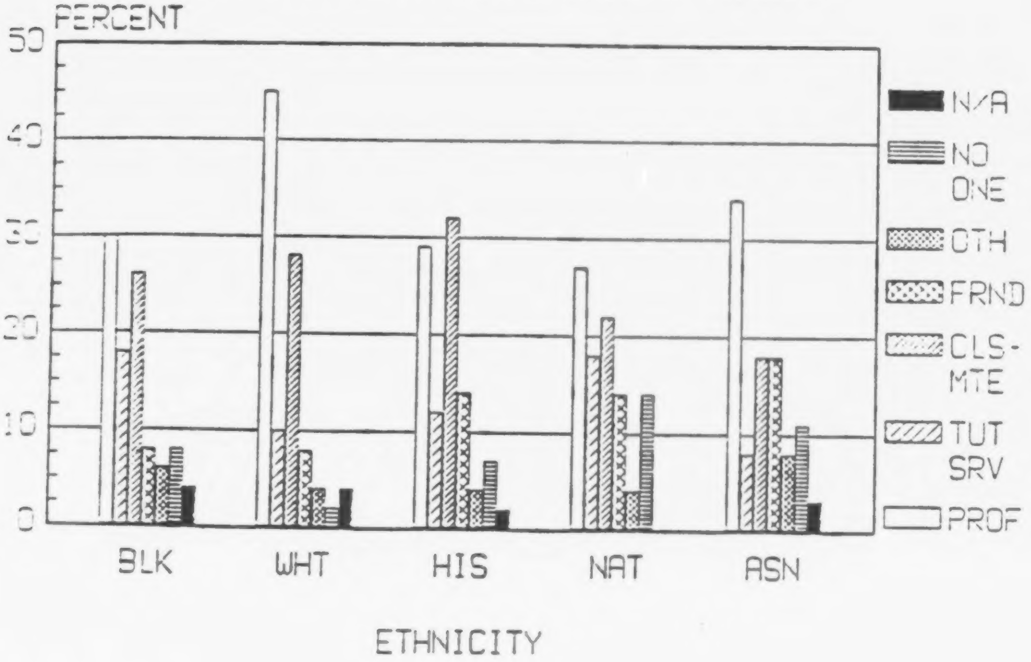


VAR 60 - SOURCE OF HELP/ACADEMIC PROBLEM

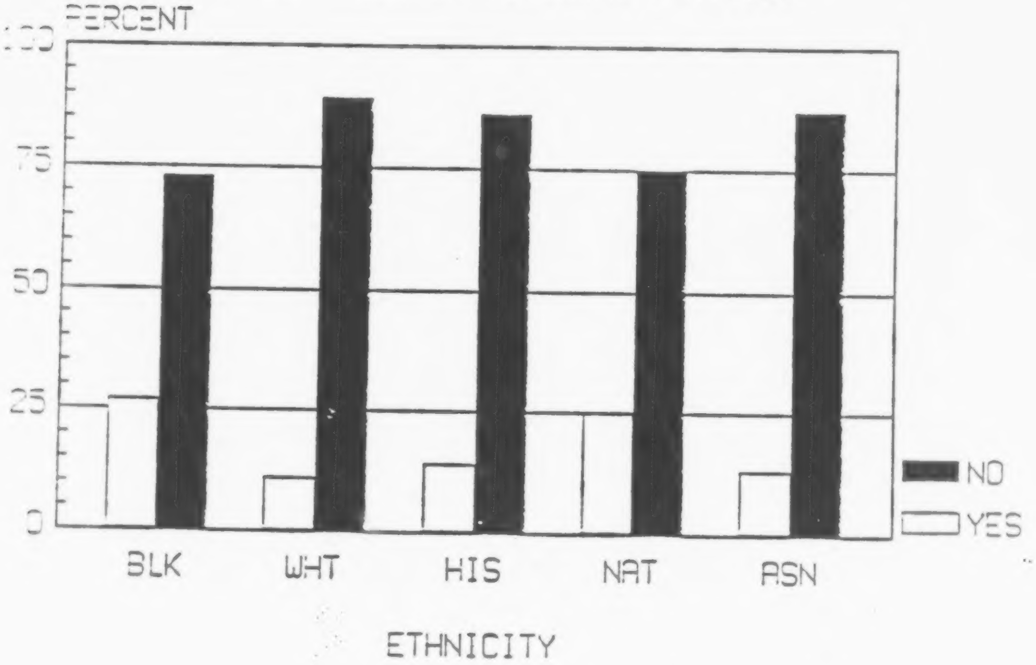


VAR 63 - USE OF TUTORIAL SERVICES



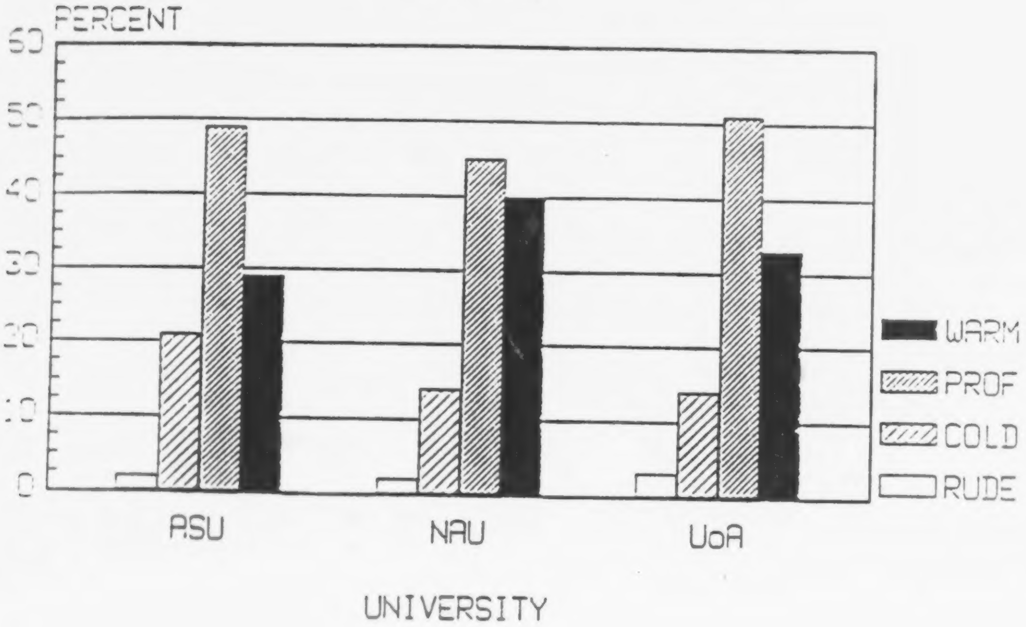


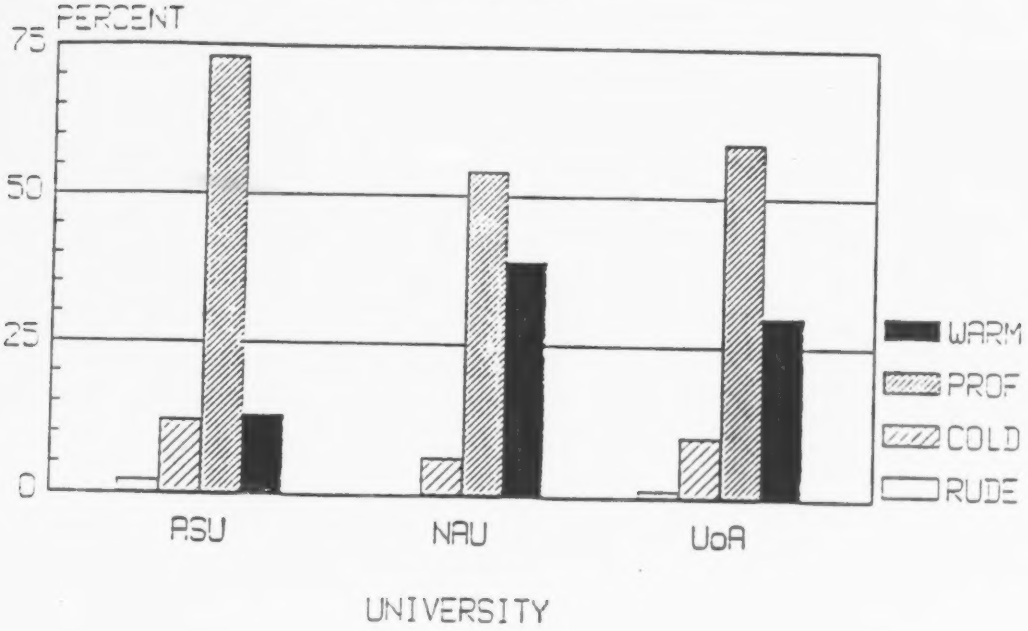
VAR 60 - SOURCE OF HELP/ACADEMIC PROBLEM

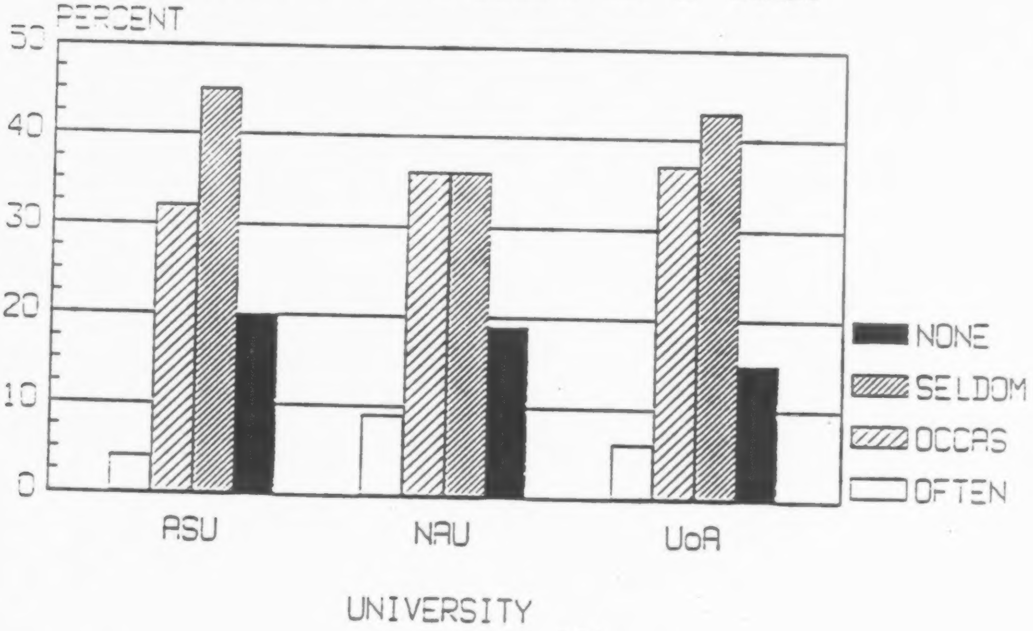


VAR 63 - USE OF TUTORIAL SERVICES

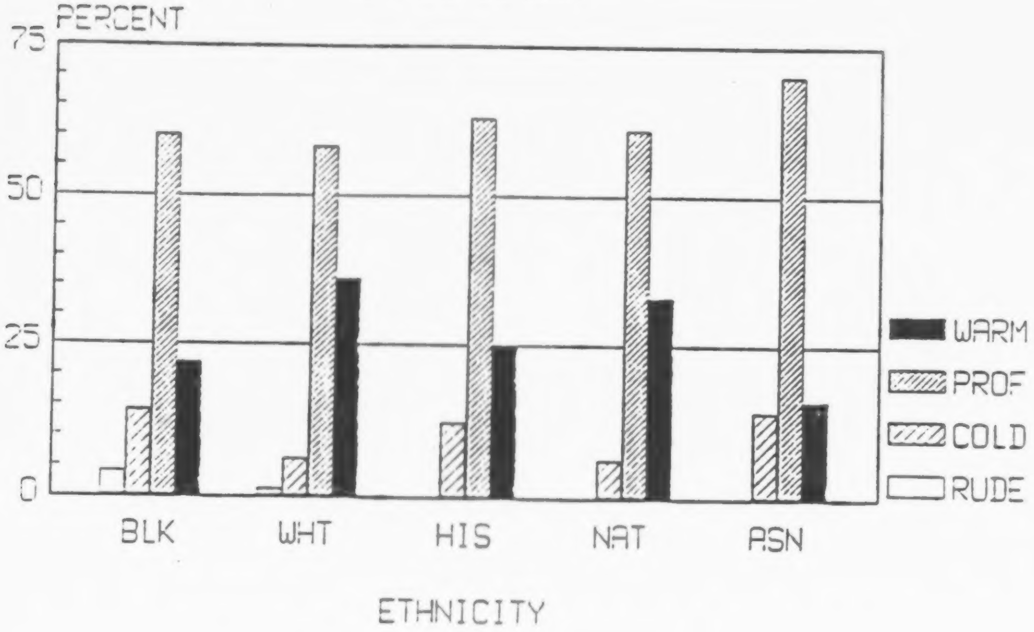
VAR 62 - INTERACTION WITH UNIVERSITY PERSONNEL



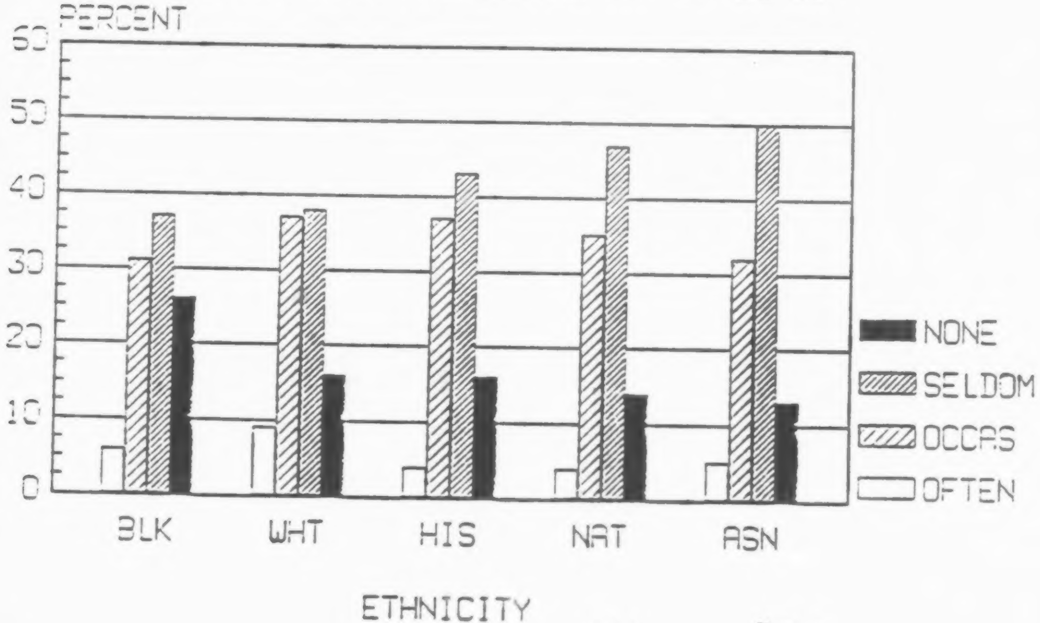

VAR 64 - INTERACTION WITH PROFESSOR IN CLASSROOM


VAR 65 - FREQUENCY OF ACADEMIC INTERACTION WITH PROFESSORS OUT OF CLASS

VAR 64 - INTERACTION WITH PROFESSOR IN CLASSROOM



VAR 65 - FREQUENCY OF ACADEMIC INTERACTION WITH PROFESSORS OUT OF CLASS



APPENDIX I

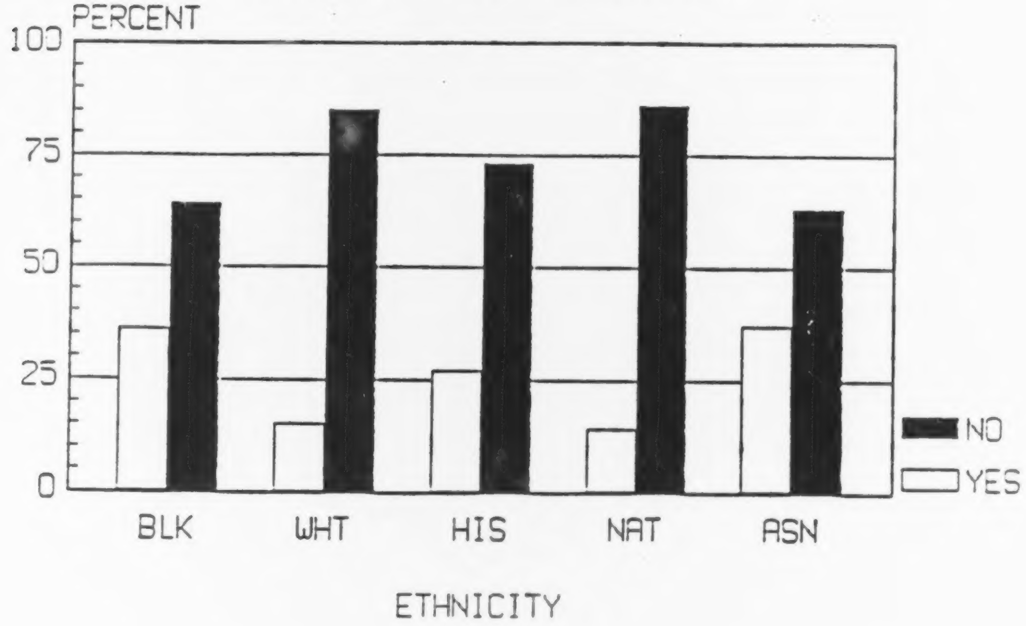
CAREER PLACEMENT AND FUTURE STUDIES

1. Only about one quarter of the respondents use career/placement services (Var 66) but those who do make use of this service do so for employment assistance and as a source of career information (Var 68).

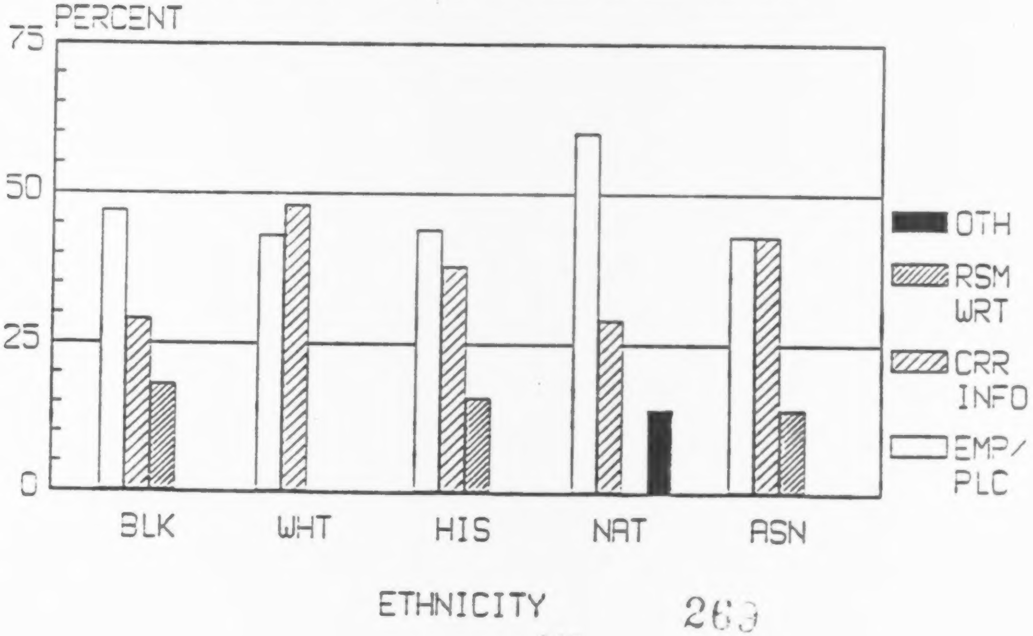
2. When asked what factors could prevent the student from returning to the university next semester, although the majority of students planned to return (Var 68), among those students the most prevalent barrier to degree completion (Var 69) was financial difficulty.

3. Of those students electing to continue graduate studies (Var 70) at the three universities, Blacks, Whites and Hispanics chose UA first with ASU and NAU second and third; Native American students chose UA, NAU and ASU in that order and Asians predominantly chose ASU. Interestingly, about one quarter of students in all groups chose out-of-state universities, especially the Asian group. About one quarter do not plan to continue graduate studies. Of further interest is the preponderant choice by students of their "home" university, although less so by NAU students.

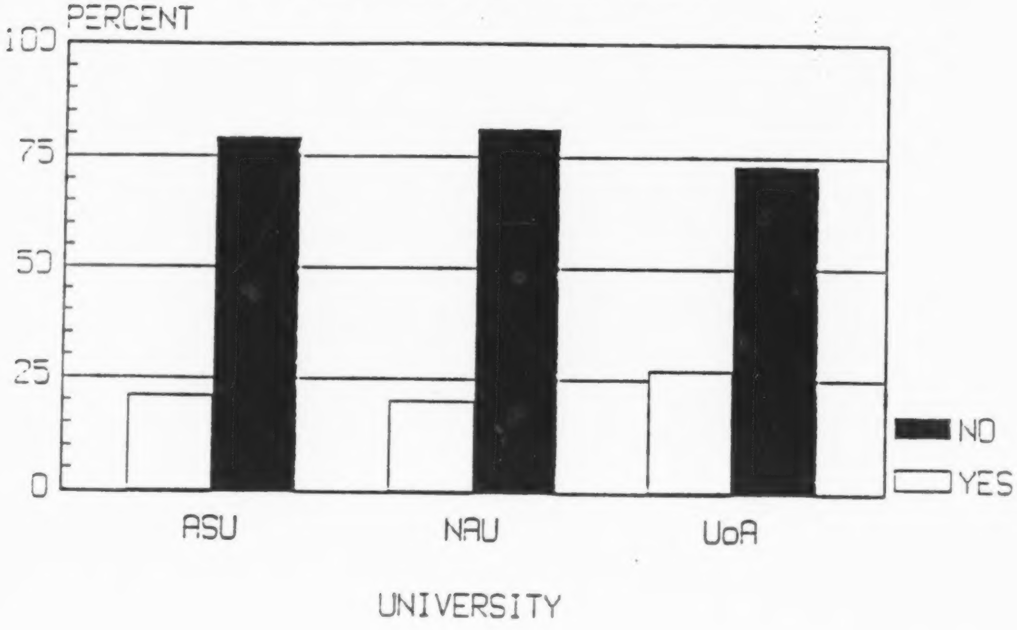
VAR 66 - SOUGHT HELP OF THE CAREER/PLACEMENT SERVICES



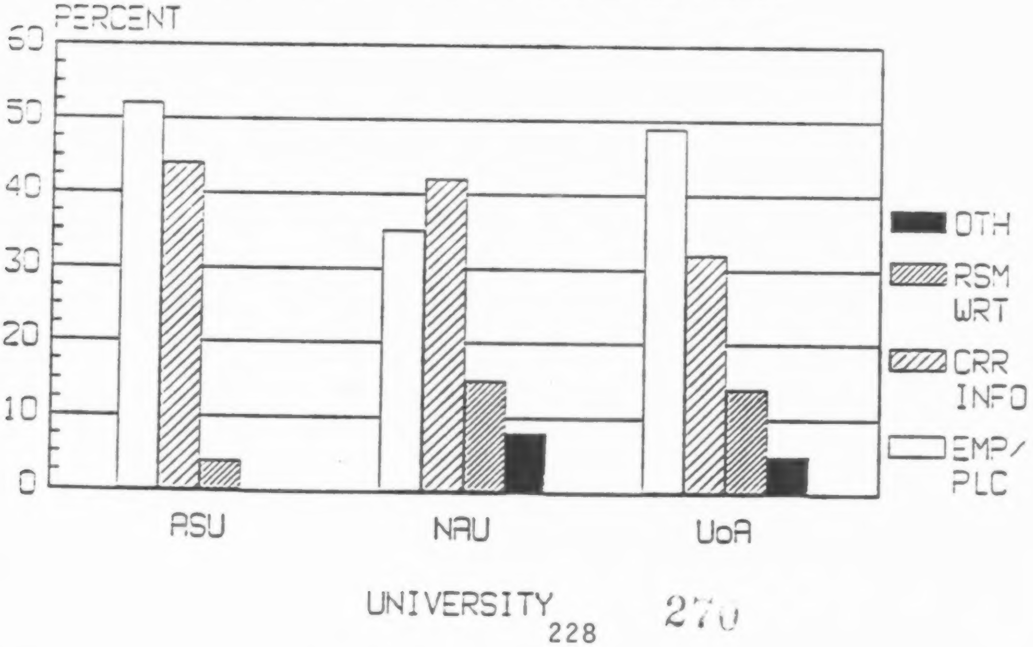
VAR 67 - MOST USED CAREER/PLACEMENT SERVICE (BY STUDENTS USING CENTERS)



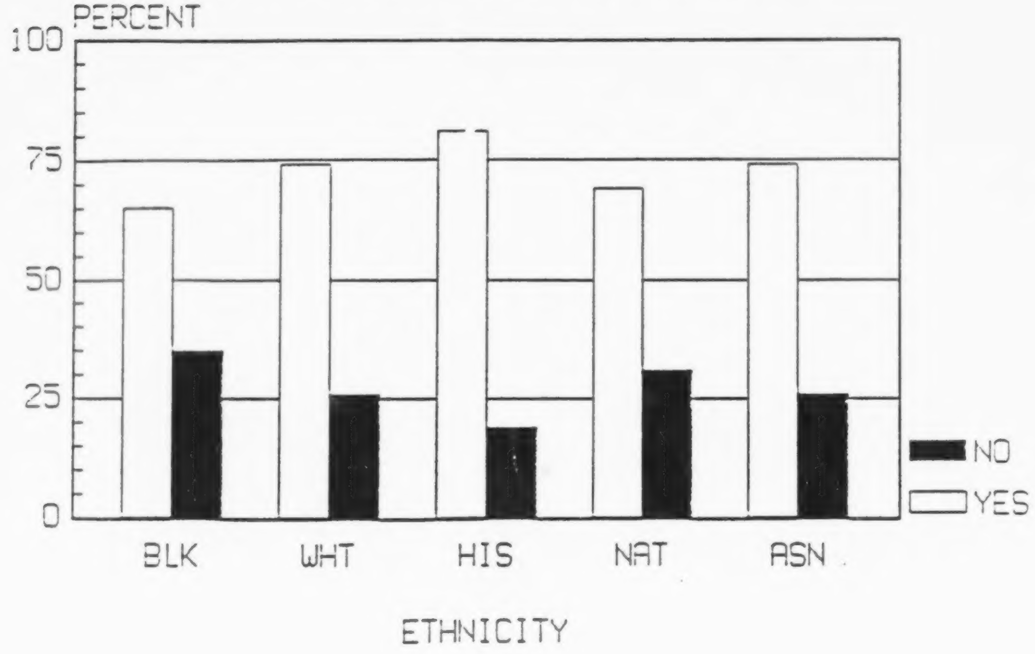
VAR 66 - SOUGHT HELP OF THE CAREER/PLACEMENT SERVICES



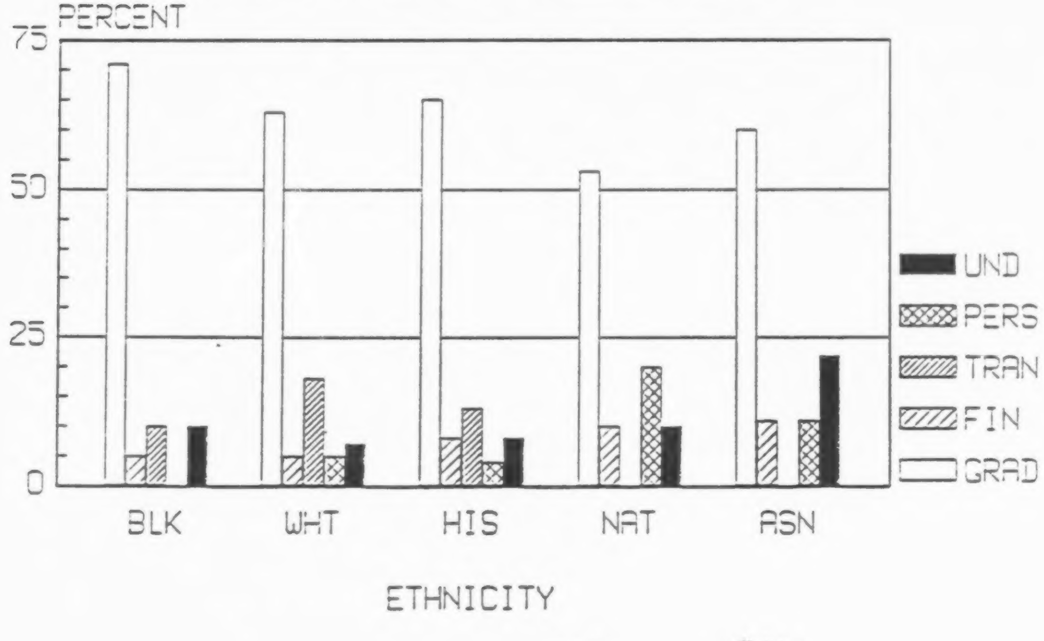
VAR 67 - MOST USED CAREER/PLACEMENT SERVICE (BY STUDENTS USING CENTERS)



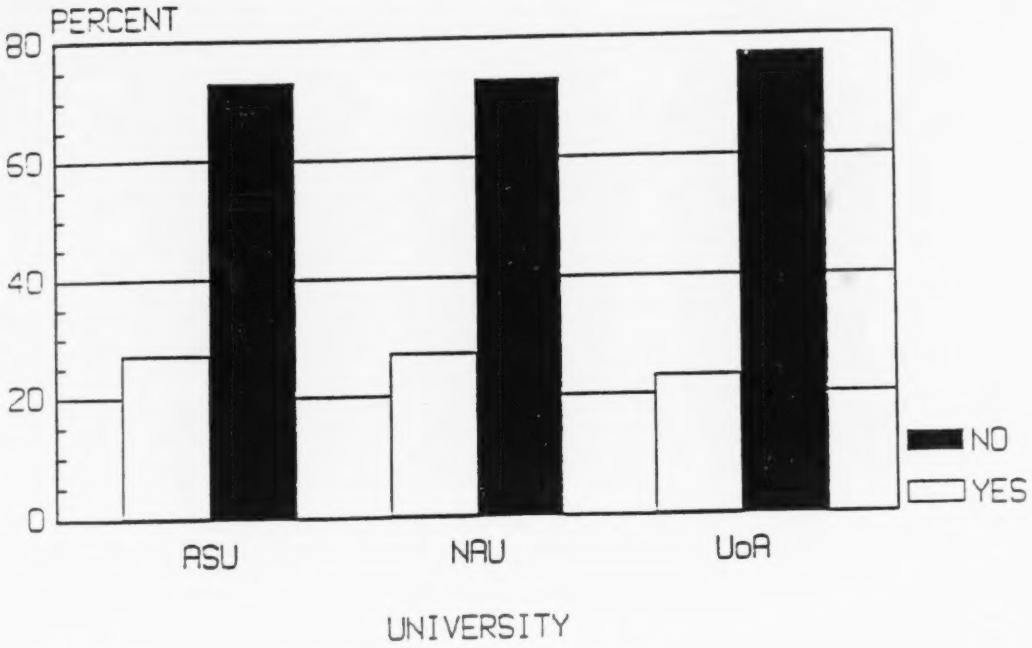
VAR 68 - EXPECT TO RETURN IN 88-89



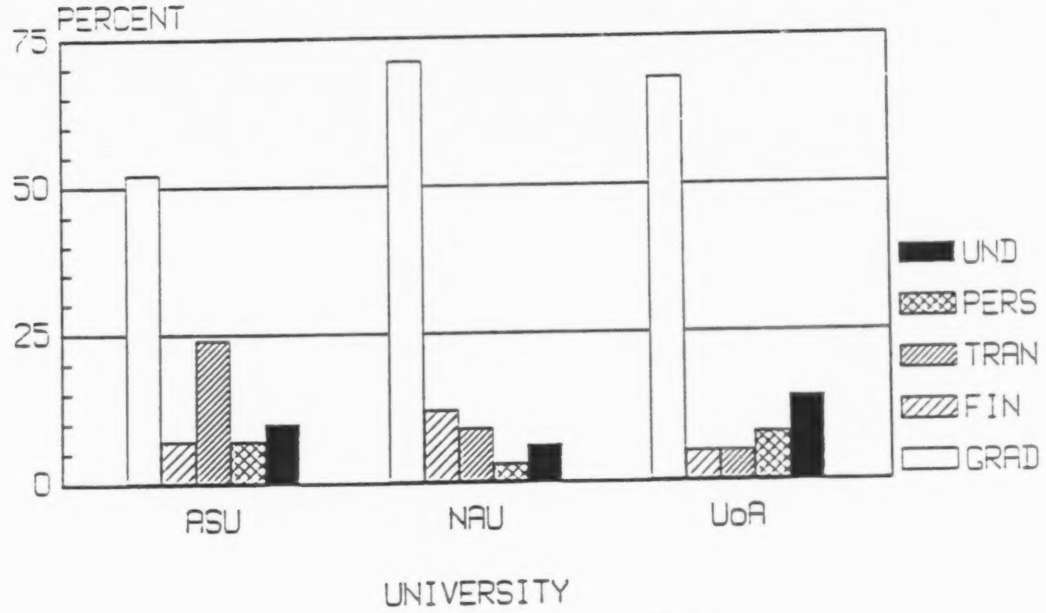
VAR 68B - REASONS FOR NOT RETURNING
TO THIS UNIVERSITY NEXT SEMESTER



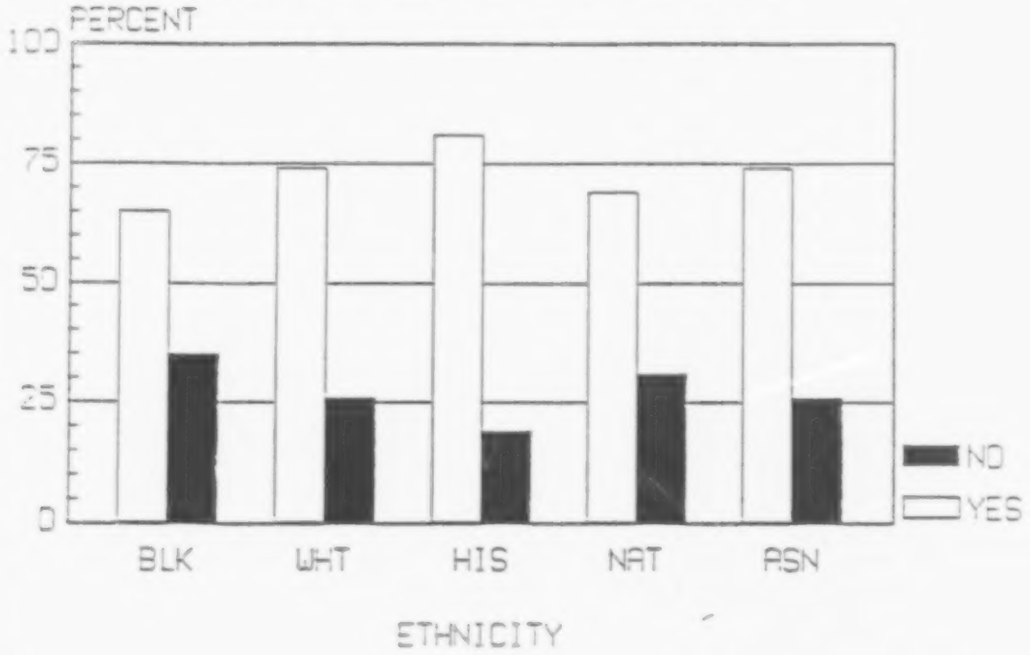
VAR 68 - EXPECT TO RETURN IN 88-89



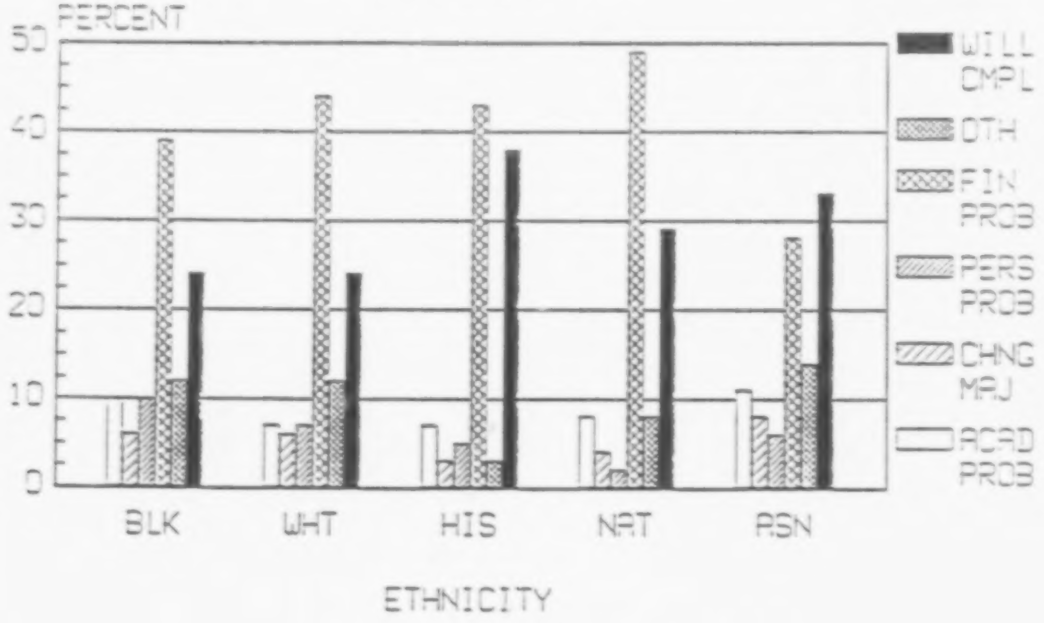
VAR 68 CONTD - REASONS FOR NOT RETURNING TO THIS UNIVERSITY NEXT SEMESTER



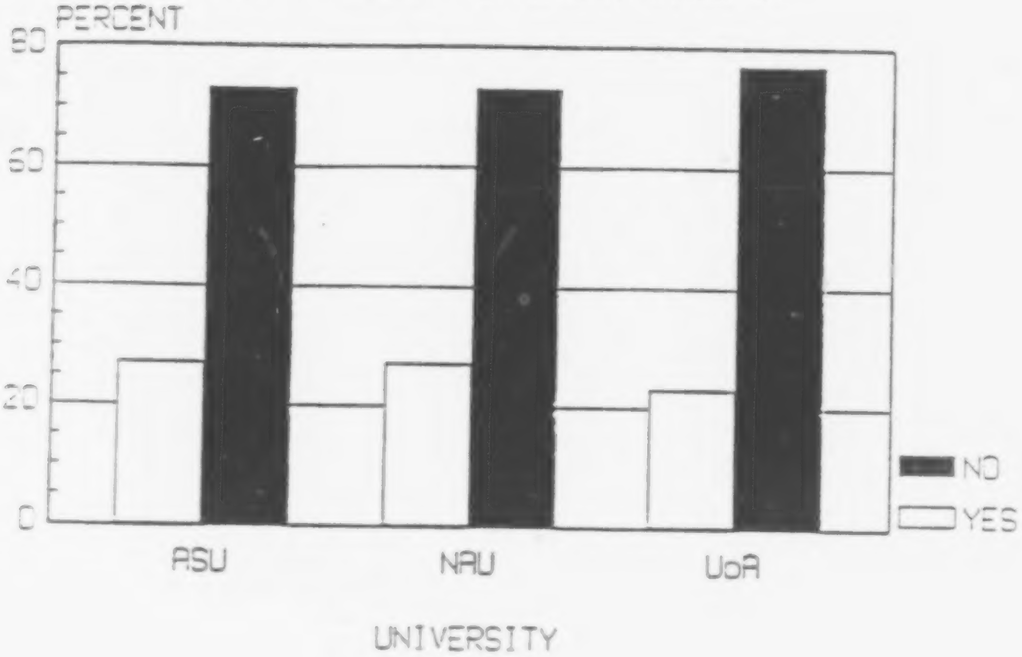
VAR 68 - EXPECT TO RETURN IN 88-89



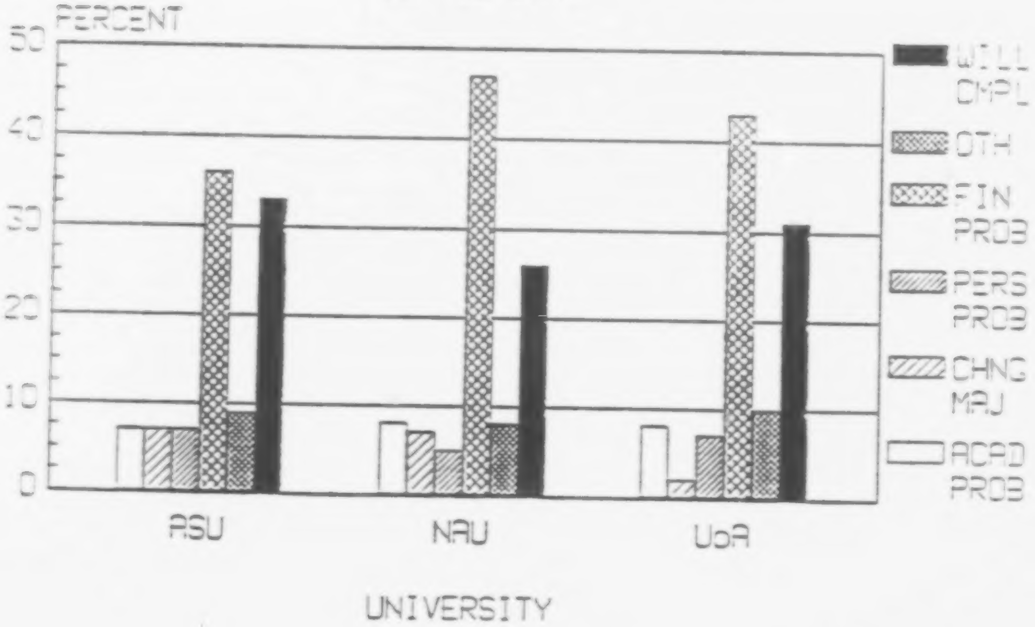
VAR 69 - POSSIBLE BARRIERS TO DEGREE COMPLETION

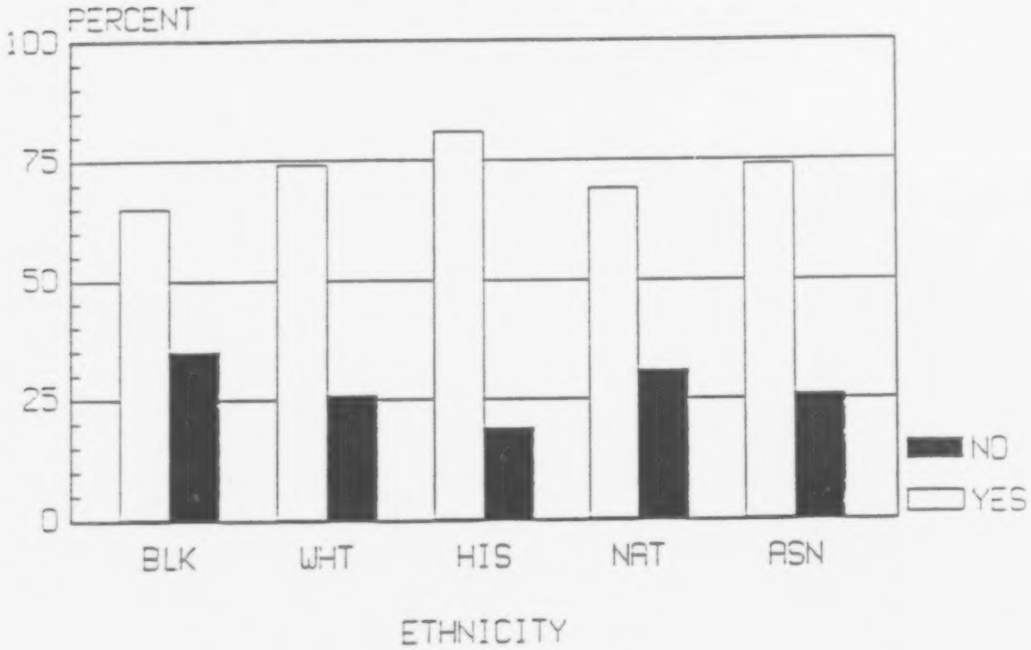


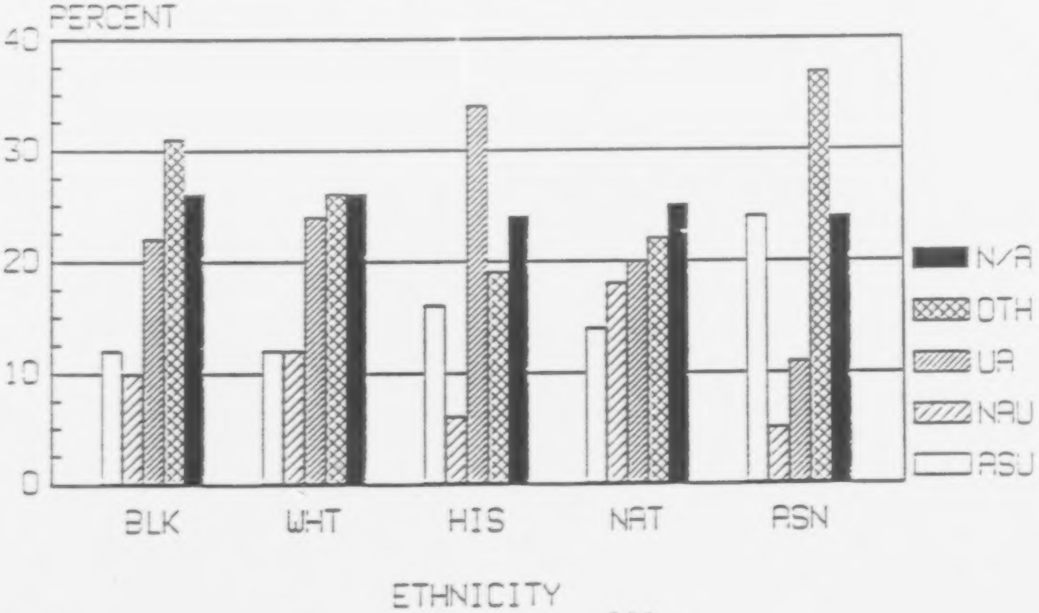
VAR 68 - EXPECT TO RETURN IN 88-89



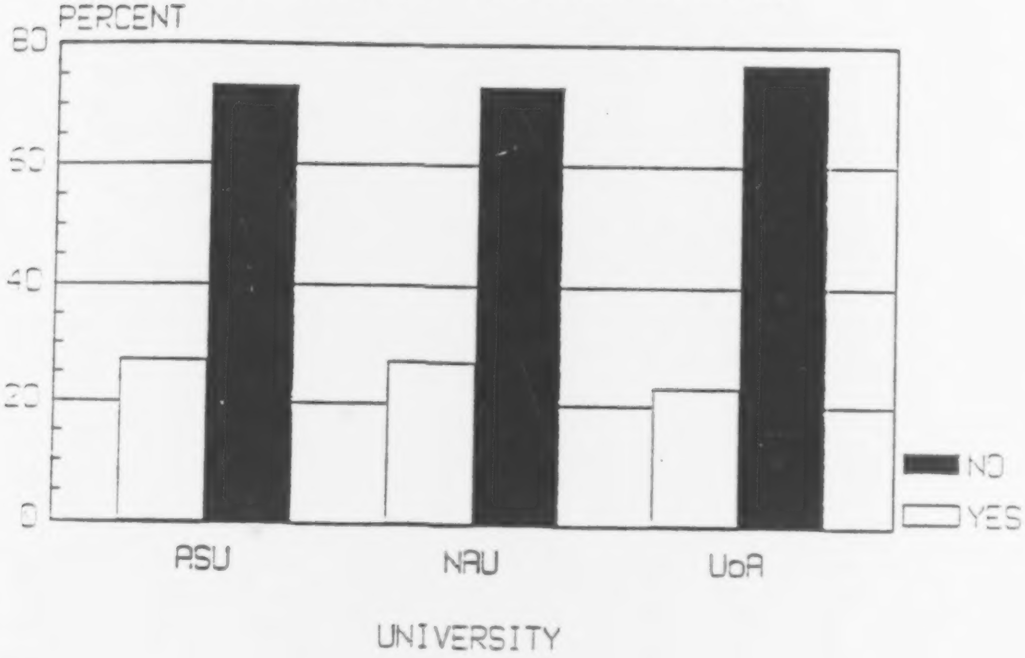
VAR 69 - POSSIBLE BARRIERS TO DEGREE COMPLETION



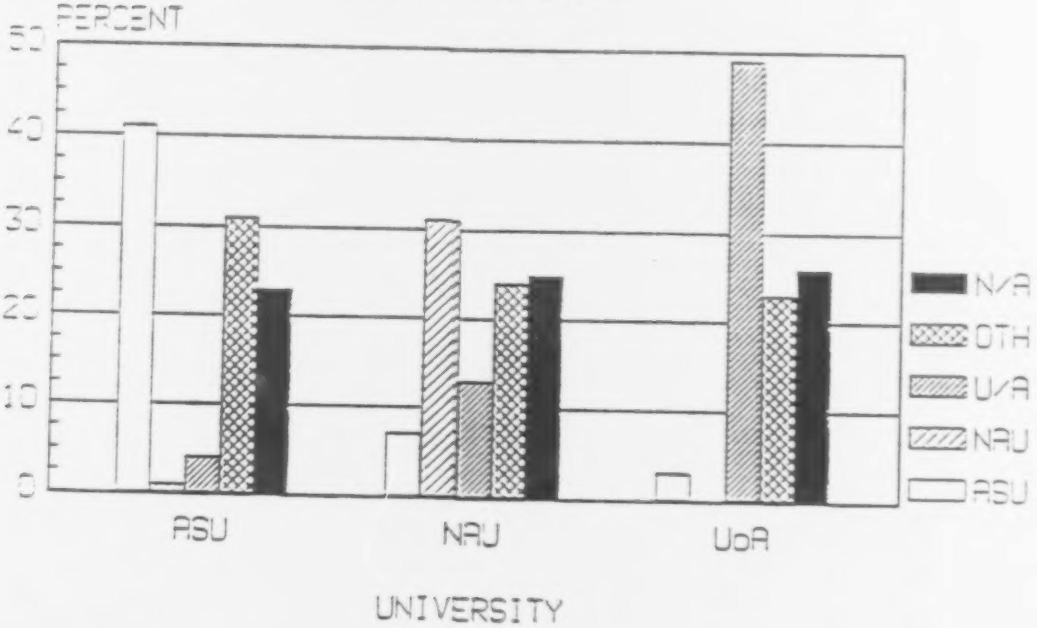

VAR 68 - EXPECT TO RETURN IN 88-89


VAR 70 - UNIVERSITY CHOSEN FOR GRADUATE STUDIES

VAR 68 - EXPECT TO RETURN IN 88-89



VAR 70 - UNIVERSITY CHOSEN FOR GRADUATE STUDIES

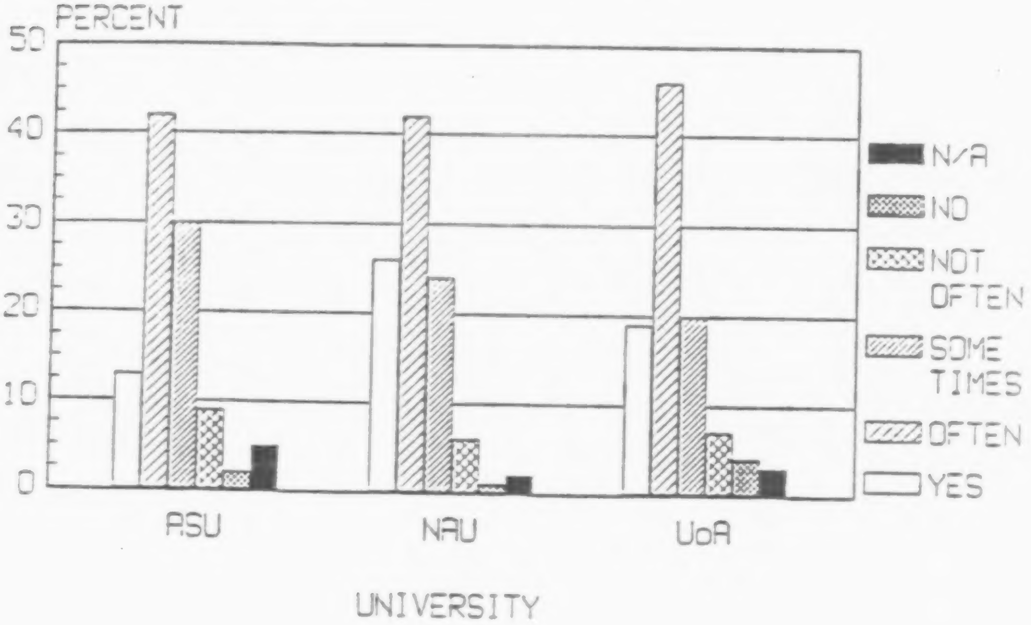


APPENDIX J

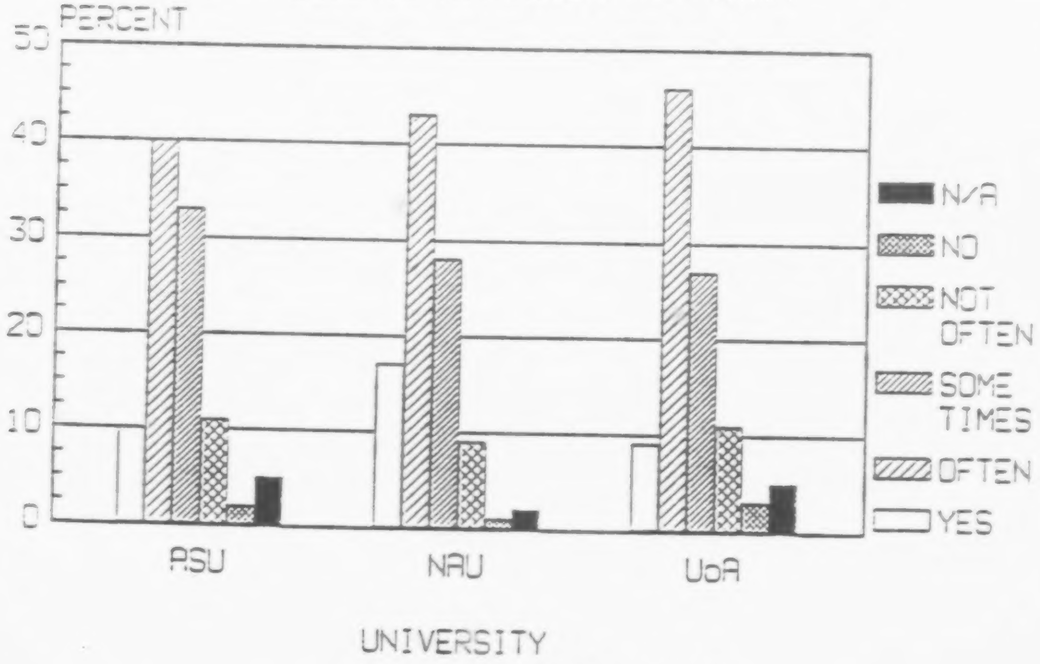
PERSONAL ATTENTION

In general, with regard to personal attention given by faculty and staff (Var 71 & 72), responses of "always and often" were cited most commonly, a bit more for faculty than for staff, with "rarely and never" much less frequently.

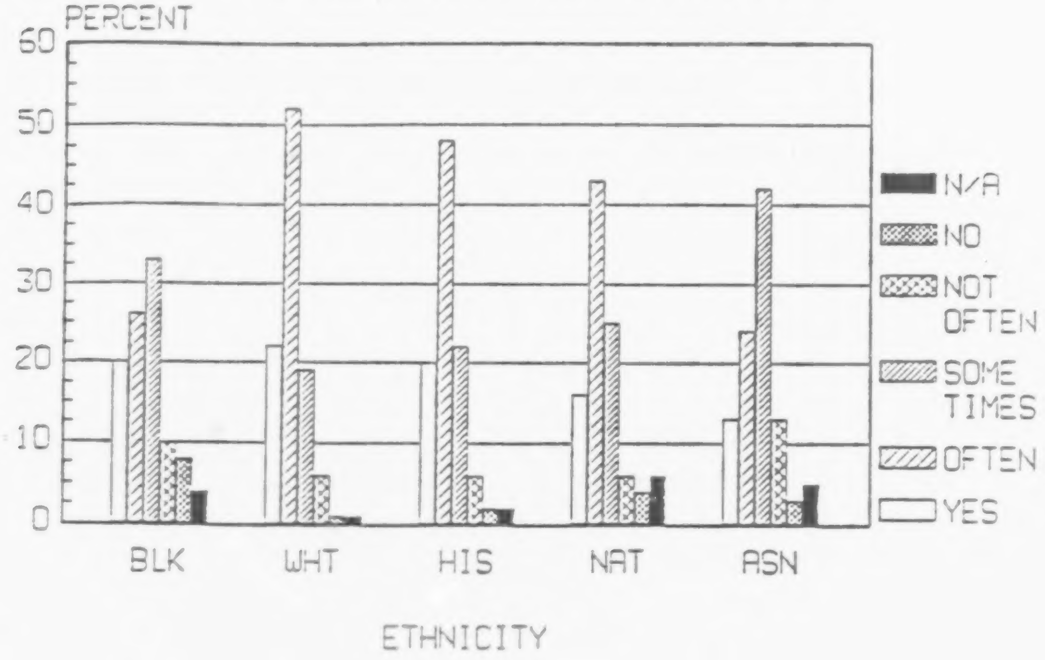
VAR 71 - ADEQUATE ATTENTION FROM FACULTY



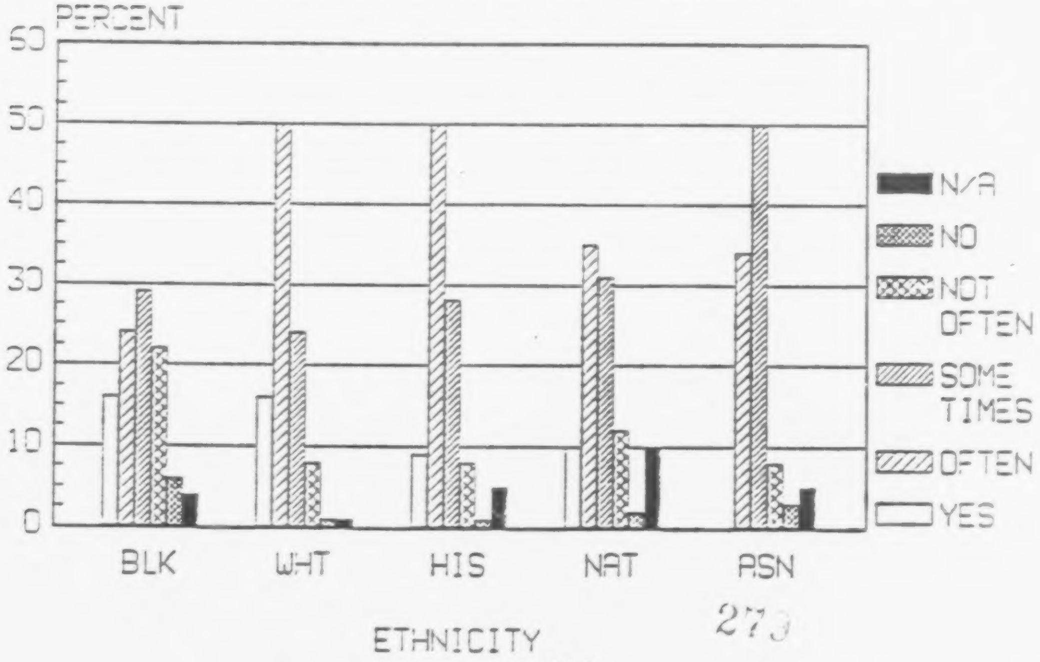
VAR 72 - ADEQUATE ATTENTION FROM STAFF



VAR 71 - ADEQUATE ATTENTION FROM FACULTY



VAR 72 - ADEQUATE ATTENTION FROM STAFF



APPENDIX K

SELF - CONCEPT

This series of questions was perhaps the most interesting of the survey with regard to gaining an insight of how the students perceive themselves. The reader is urged to review the questions before reading the responses.

1. With regard to popularity with members of the opposite sex (Var 73), Native Americans and Asians are the least comfortable; Blacks and Hispanics seem to have the most number of friends (Var 74).

2. In response to closeness to family (Var 76), Hispanics are the most dominant group and Blacks the least, with others in between. Asians and Blacks have the largest group who consider themselves below average.

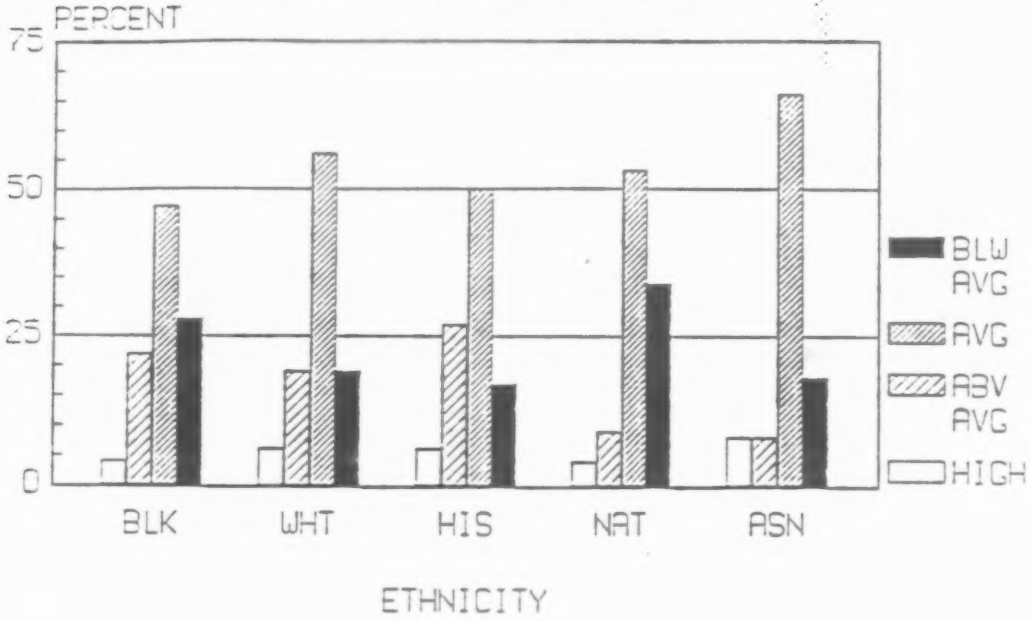
3. With regard to student perception of themselves before their teachers, there is a remarkable difference between evaluation by their high school teachers and evaluation by their university professors, with the former (Var 77) being much higher than the latter (Var 75). The degree of self-concept indicated by Native Americans is the lowest of all groups. Among university professors, the ranking of ethnic groups is Whites, Asians, Hispanics, Blacks and Native Americans in order from highest to lowest. Among universities, the differences in response are inconclusive, but with perhaps evaluation by NAU professors being somewhat higher than UA and both higher than ASU. The data in this chart deserve further study.

4. In response to the students' concept of their physical health (Var 78), Blacks and Native American regard themselves somewhat lower than other groups and ASU students rate themselves highest.

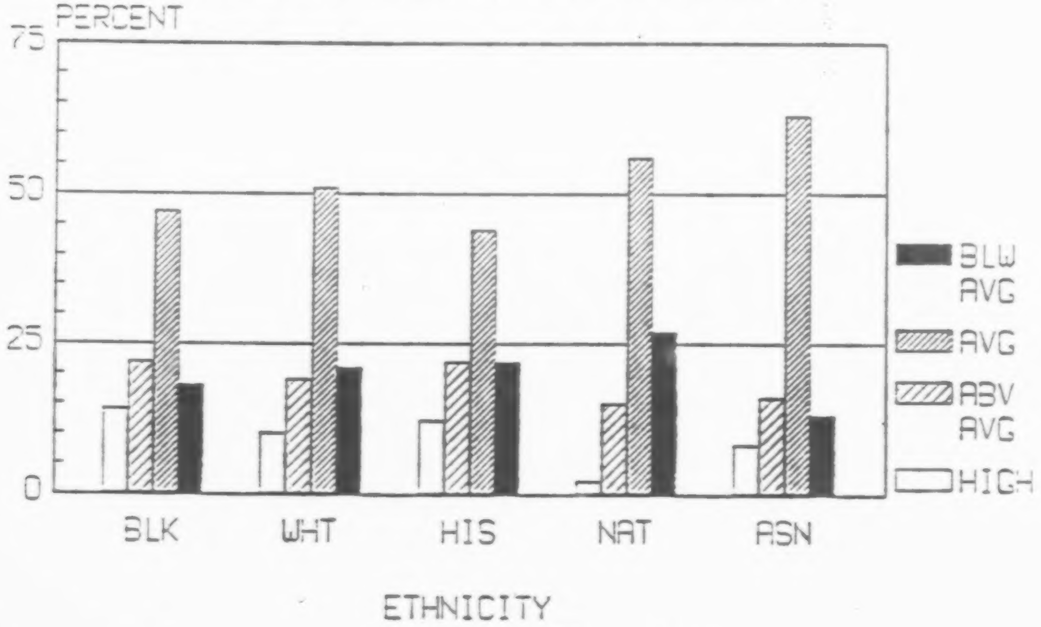
5. In the areas of confidence in social settings (Var 79), Blacks, Whites, and Hispanics are similarly confident with Asians and Native Americans distinctively less so. In leadership ability (Var 80), Blacks and Hispanics are similar with Native Americans distinctly different from these two groups. Interestingly, Asians regard themselves as being more average among their peers than do Native Americans.

   As further indicated earlier, the responses to this question set deserve further study.

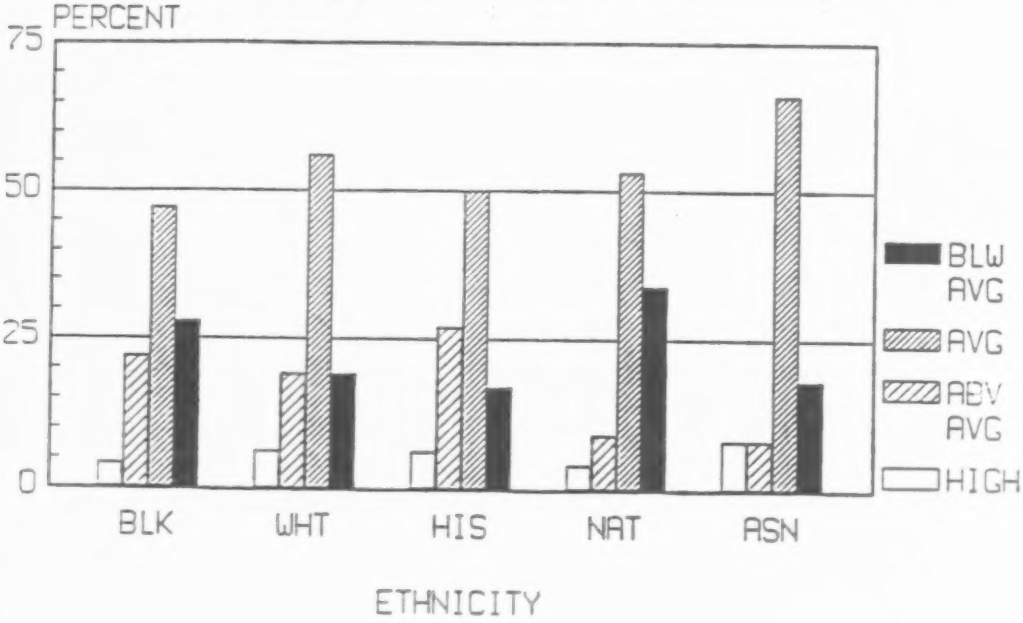
VAR 73 - SELF CONCEPT:
POPULARITY WITH OPPOSITE SEX



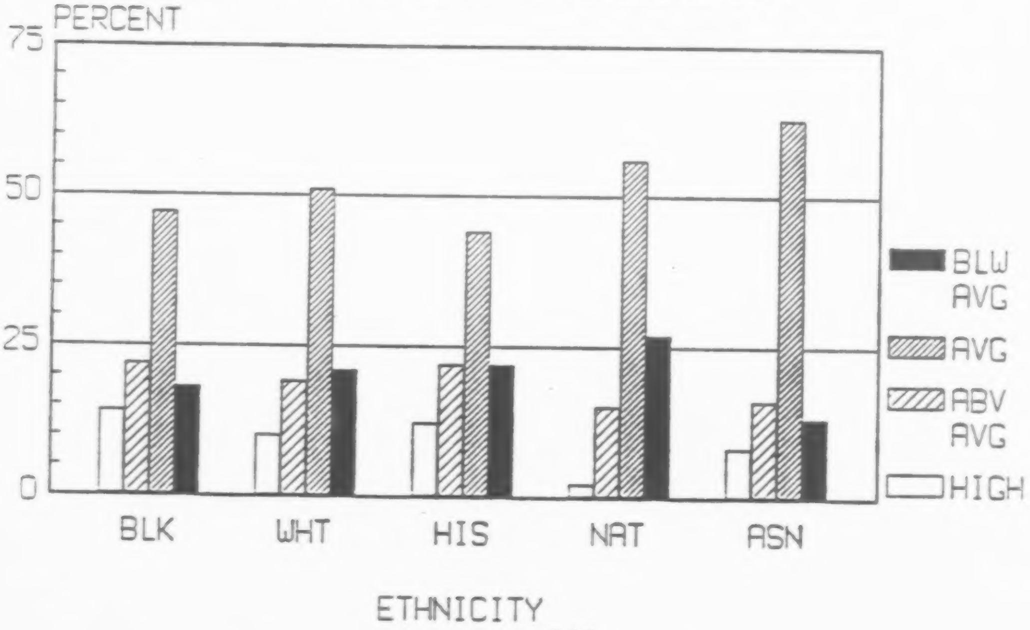
VAR 74 - SELF CONCEPT:
NUMBER OF FRIENDS AT THIS UNIVERSITY



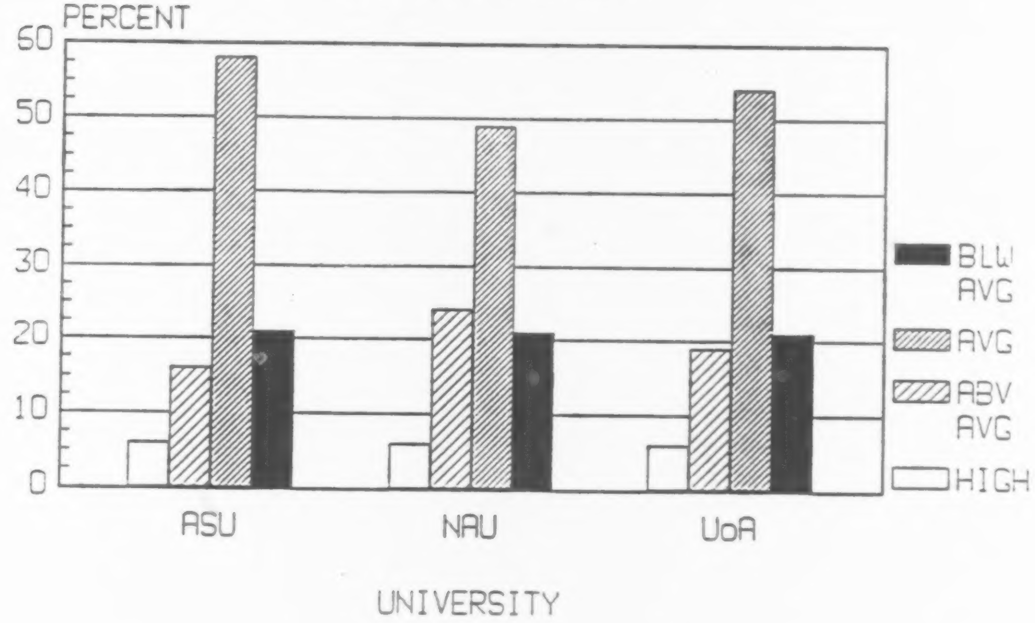
VAR 73 - SELF CONCEPT:
POPULARITY WITH OPPOSITE SEX



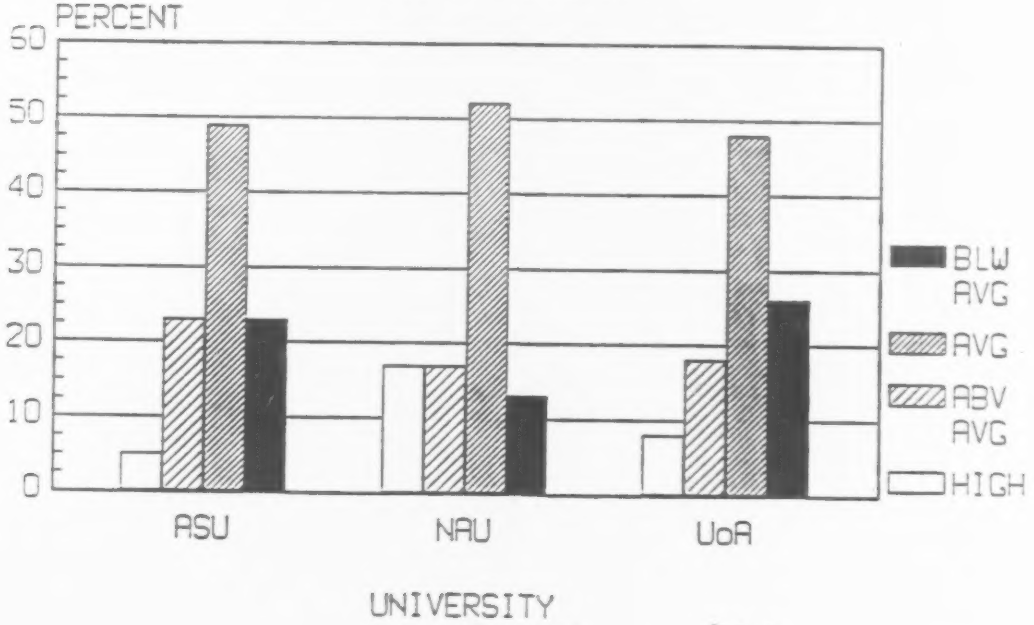
VAR 74 - SELF CONCEPT:
NUMBER OF FRIENDS AT THIS UNIVERSITY



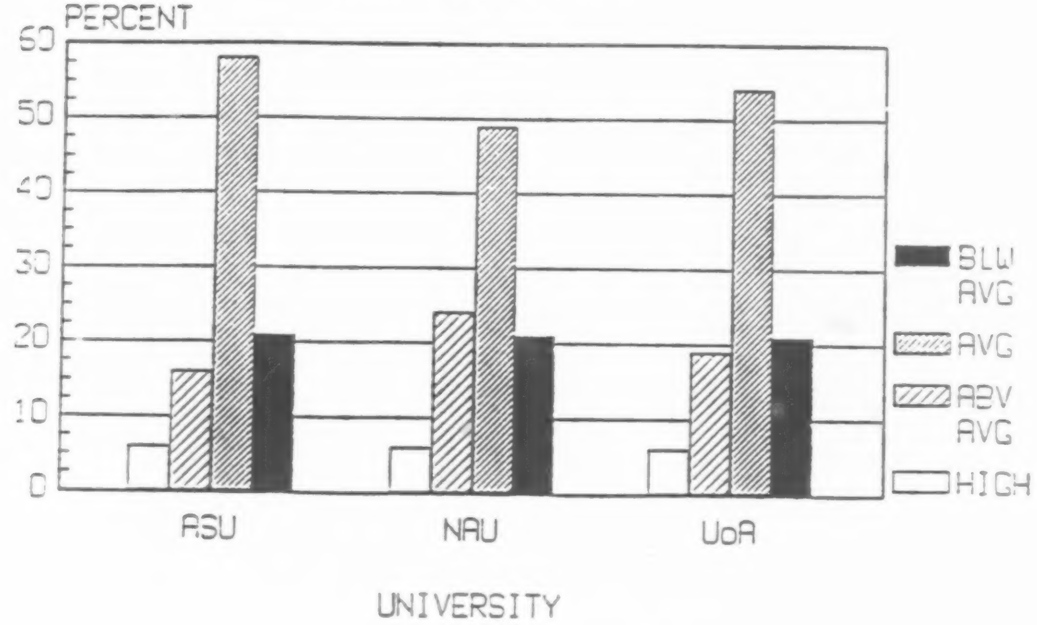
VAR 73 - SELF CONCEPT: POPULARITY
WITH OPPOSITE SEX



VAR 74 - SELF CONCEPT: NUMBER OF FRIENDS
AT THIS UNIVERSITY



VAR 73 - SELF CONCEPT: POPULARITY
WITH OPPOSITE SEX



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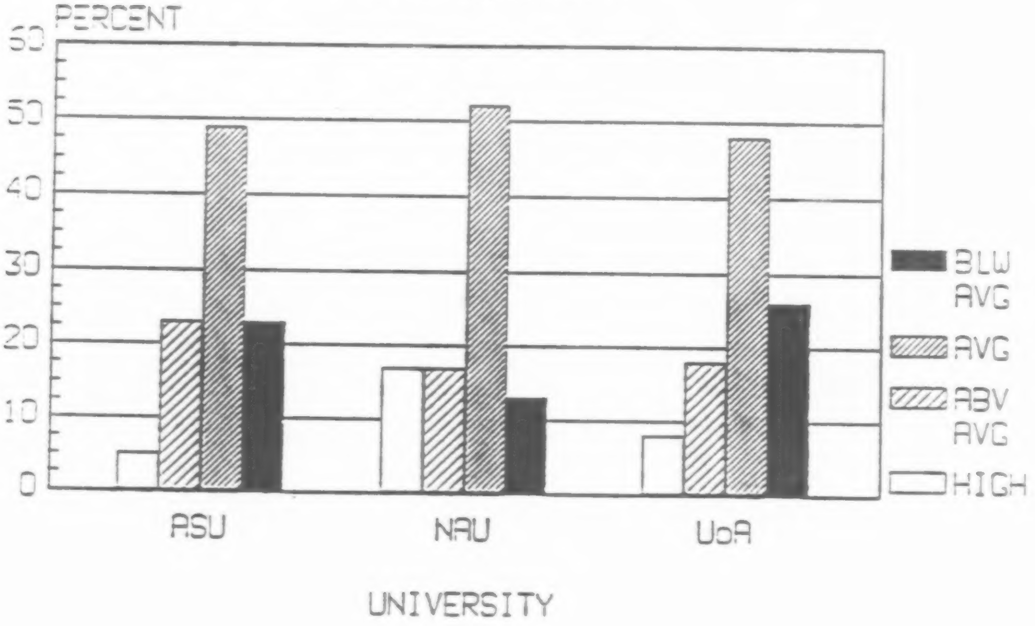
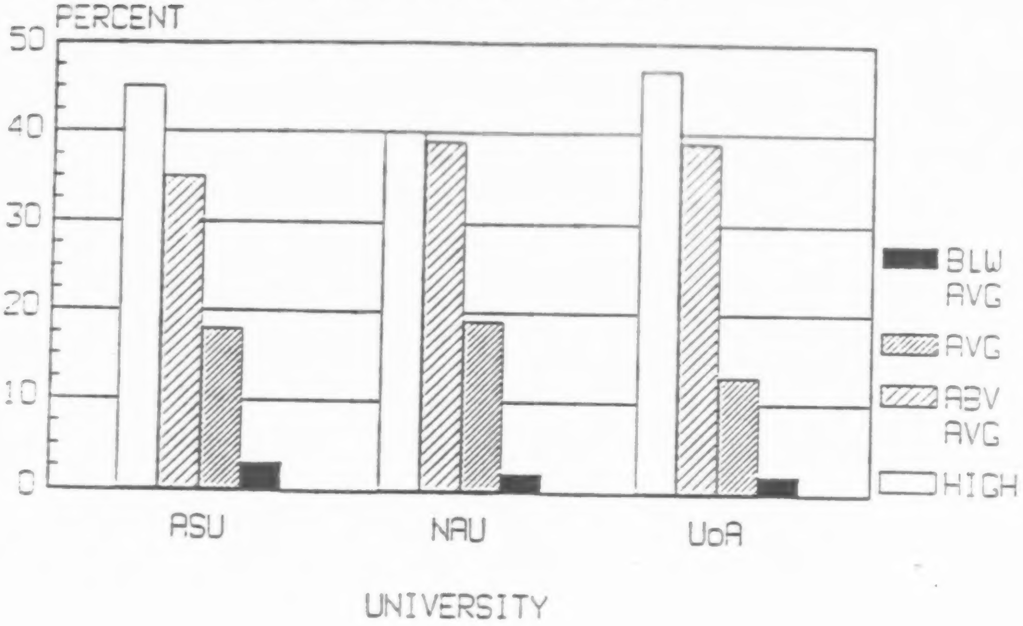
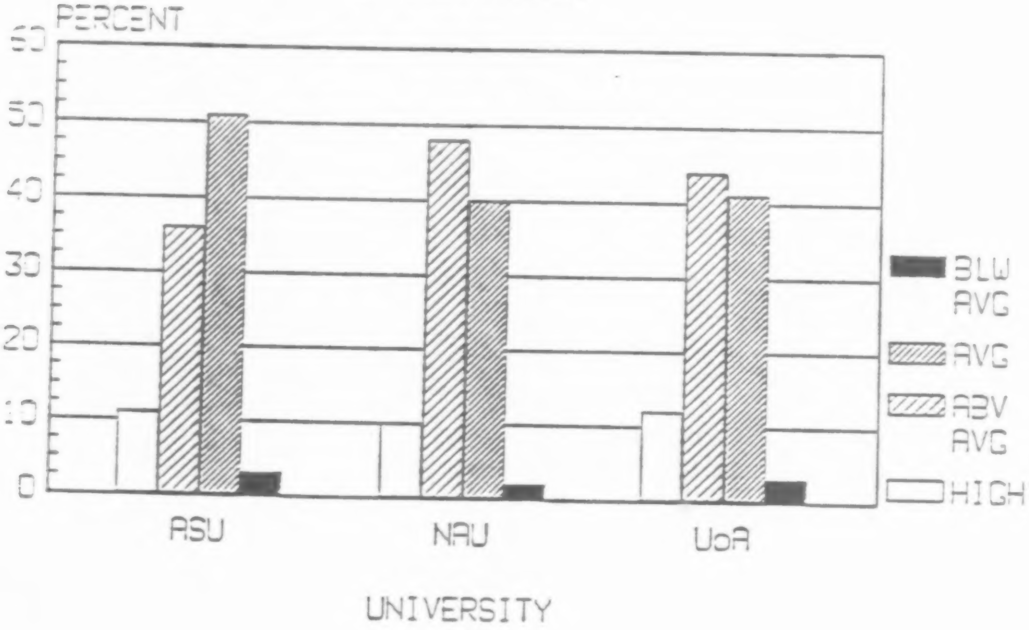
AT THIS UNIVERSITY

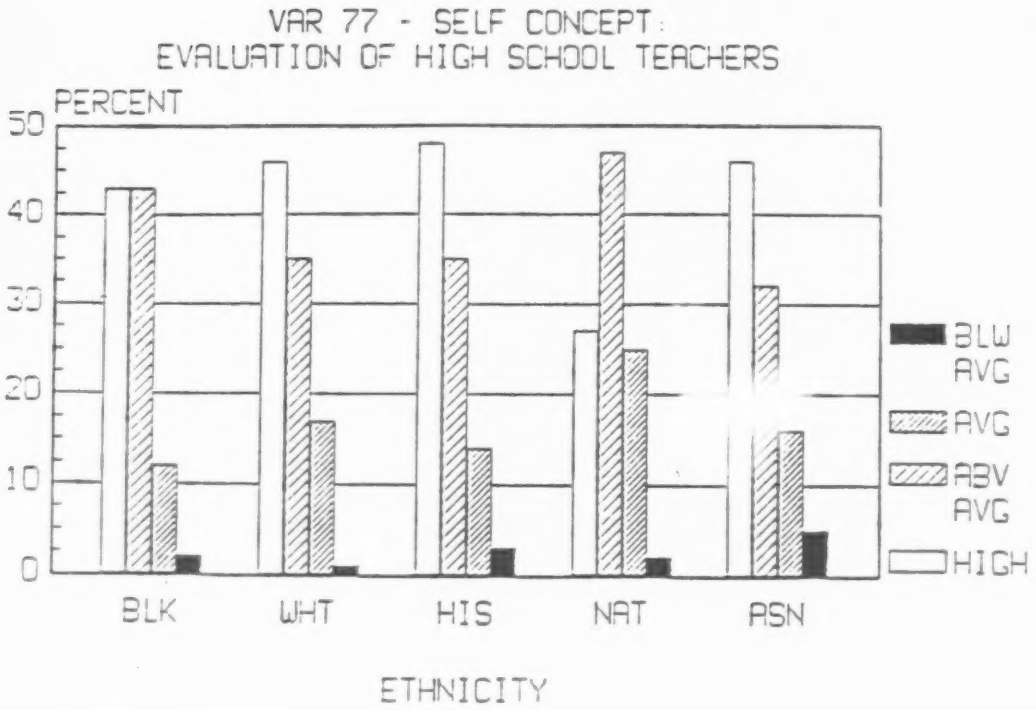


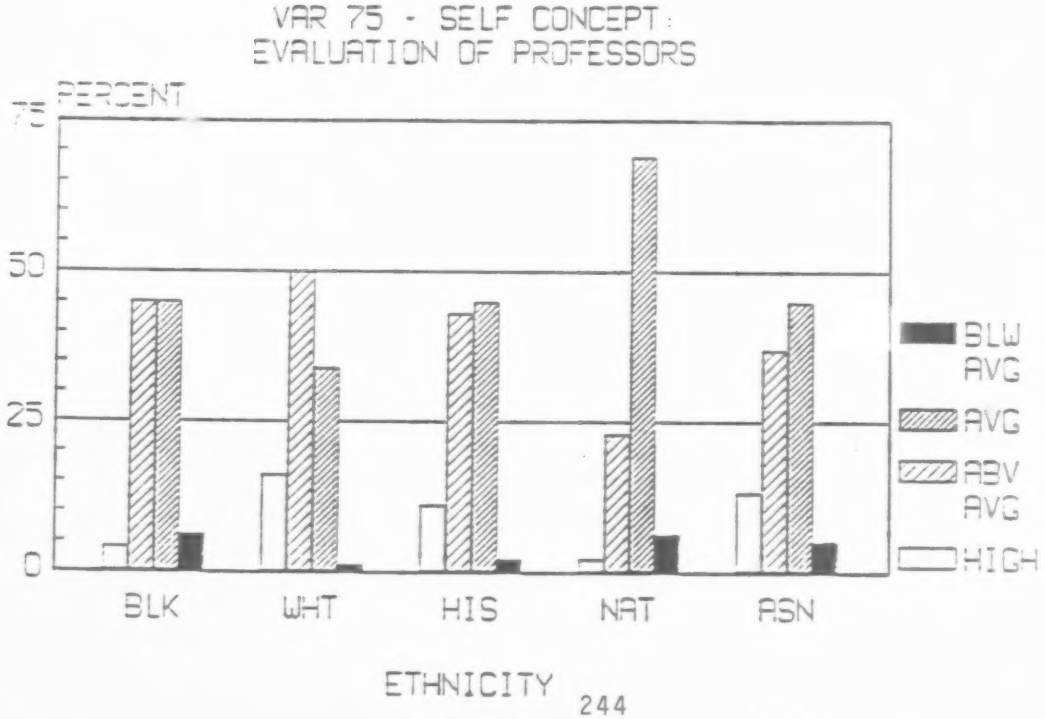
VAR 77 - SELF CONCEPT: EVALUATION OF HIGH SCHOOL TEACHERS



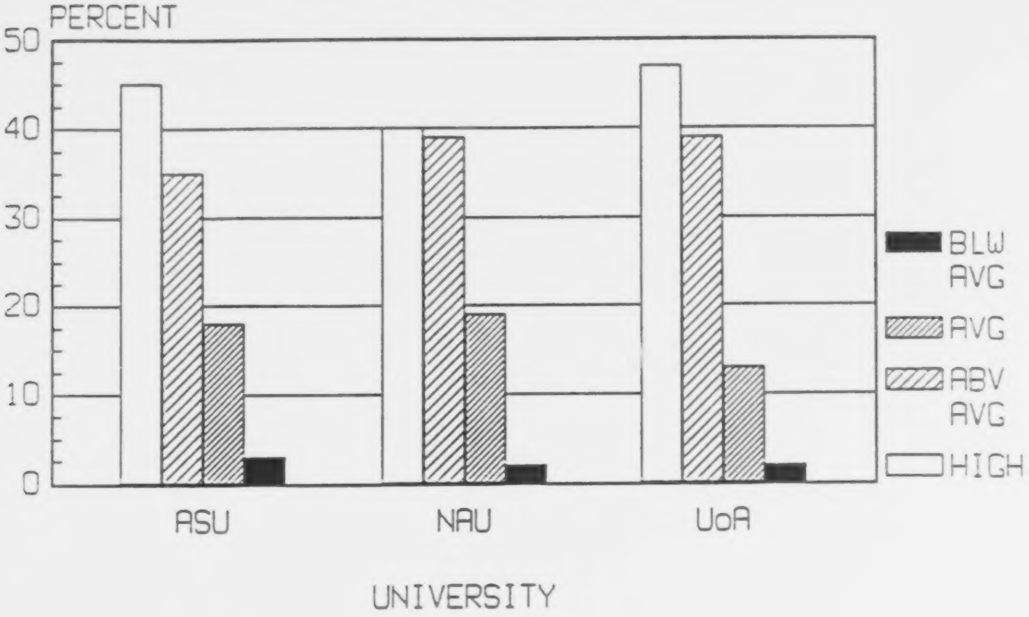
VAR 75 - SELF CONCEPT: EVALUATION OF PROFESSORS



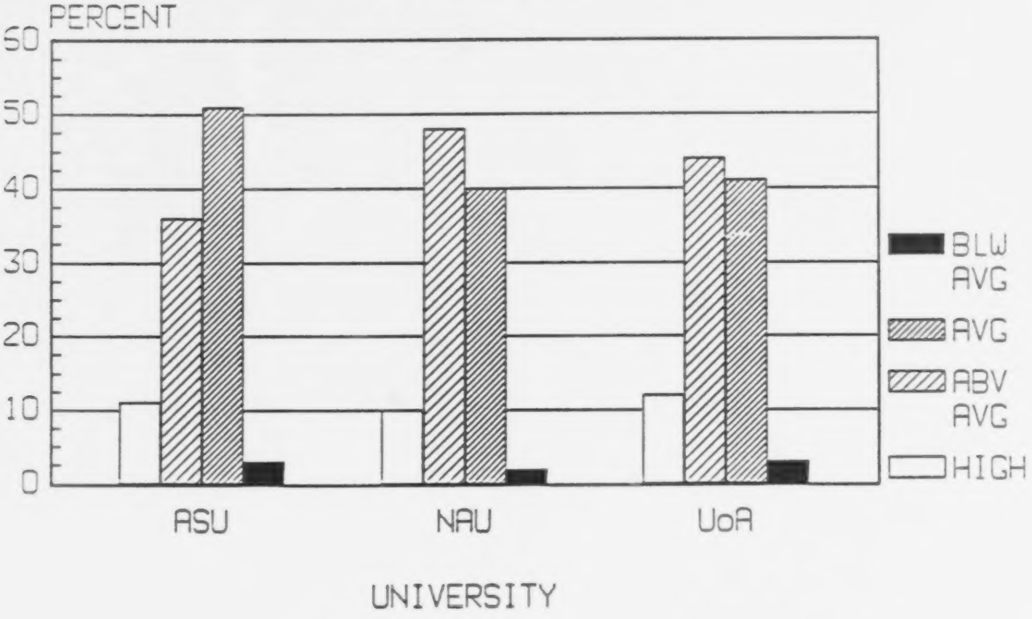

VAR 77 - SELF CONCEPT:
EVALUATION OF HIGH SCHOOL TEACHERS
PERCENT
50
40
30
20
10
0
BLK
WHT
HIS
NAT
ASN
ETHNICITY
BLW AVG
AVG
ABV AVG
HIGH


VAR 75 - SELF CONCEPT:
EVALUATION OF PROFESSORS
PERCENT
75
50
25
0
BLK
WHT
HIS
NAT
ASN
ETHNICITY
BLW AVG
AVG
ABV AVG
HIGH

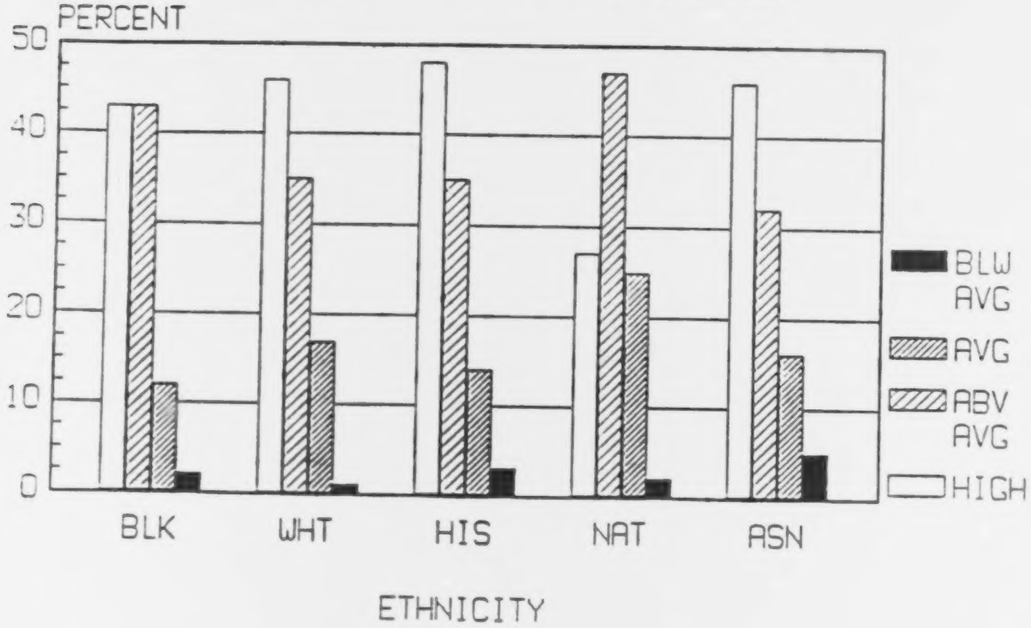
VAR 77 - SELF CONCEPT: EVALUATION
OF HIGH SCHOOL TEACHERS



VAR 75 - SELF CONCEPT: EVALUATION
OF PROFESSORS



VAR 77 - SELF CONCEPT:
EVALUATION OF HIGH SCHOOL TEACHERS



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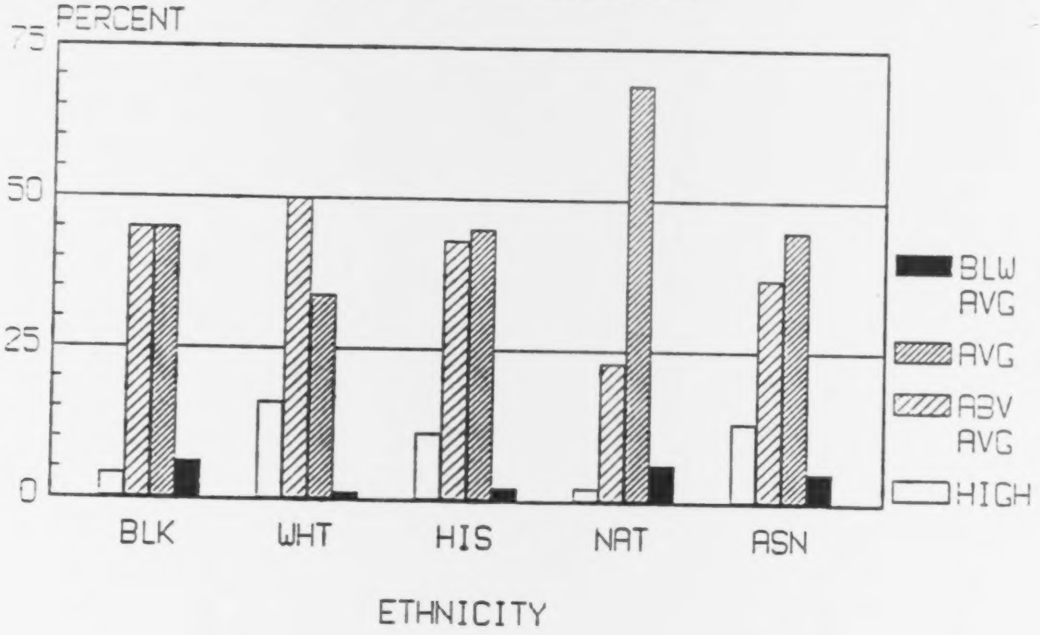
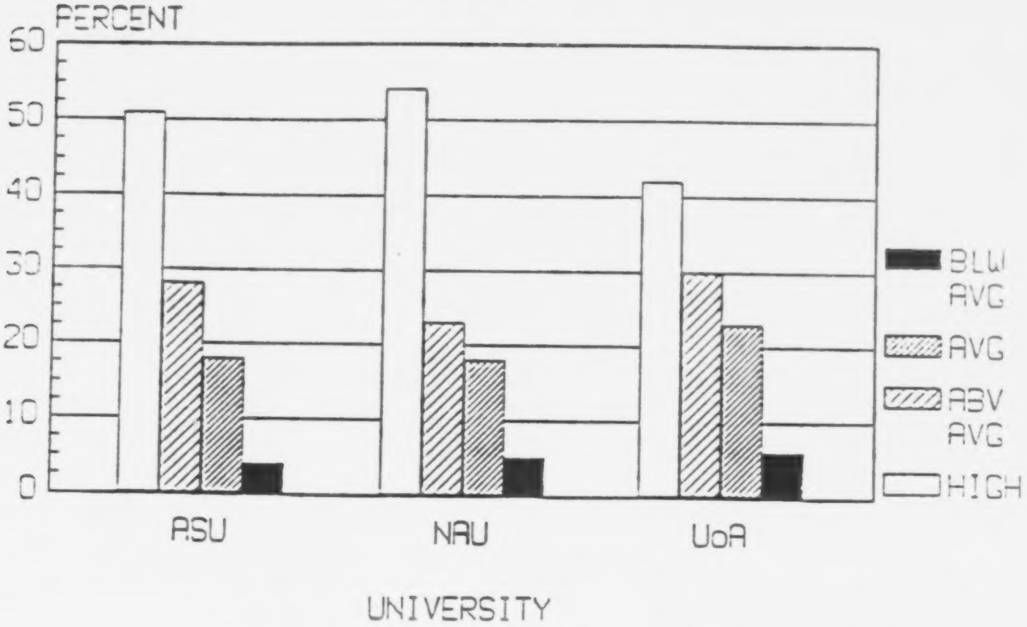
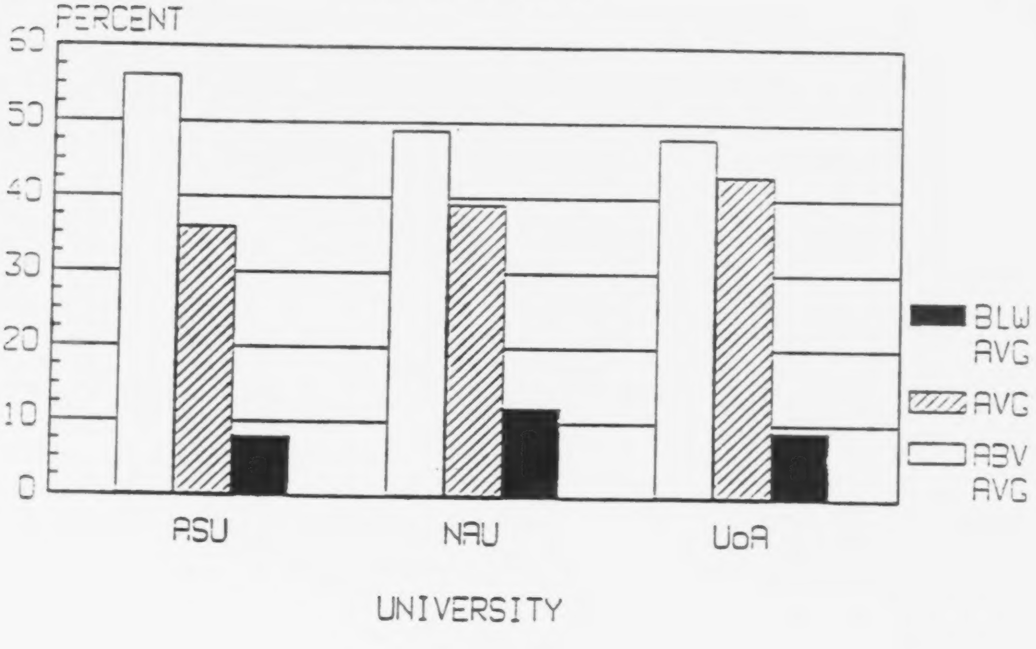
EVALUATION OF PROFESSORS



VAR 76 - SELF CONCEPT: CLOSENESS TO FAMILY



VAR 78 - SELF CONCEPT: CURRENT PHYSICAL HEALTH



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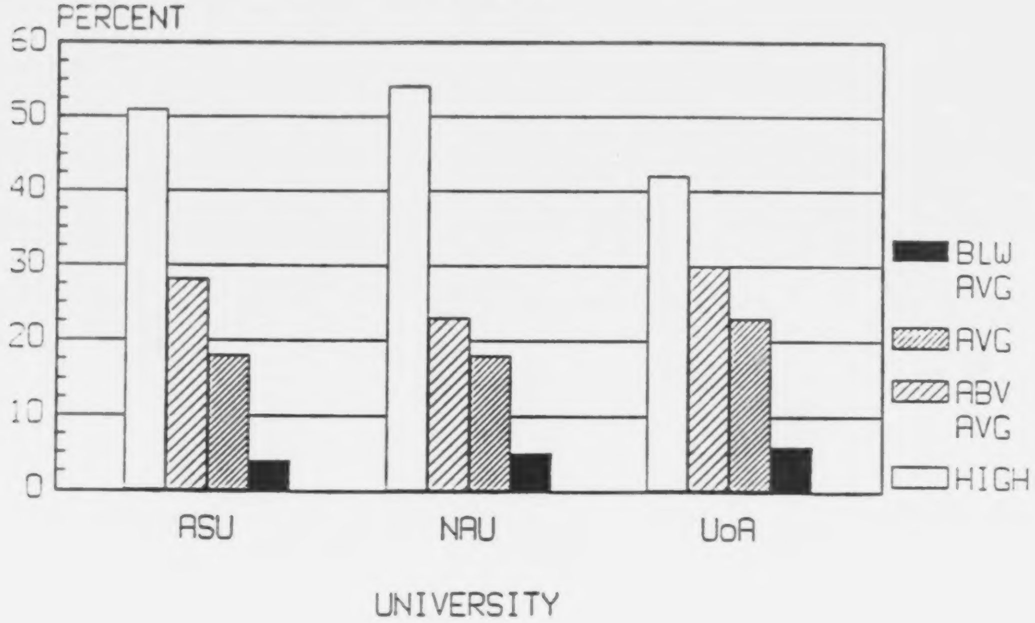
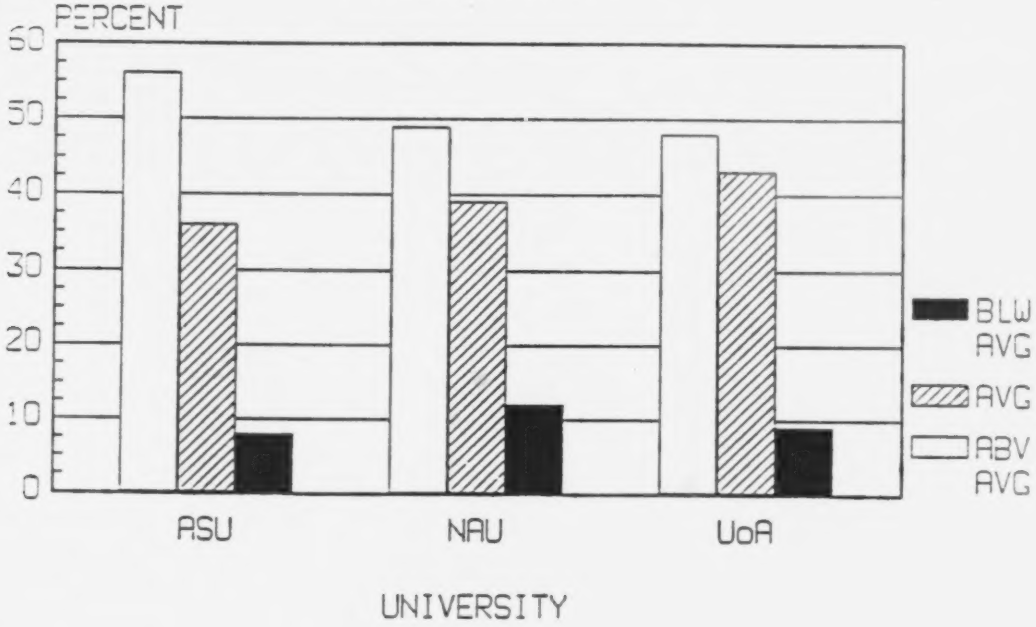
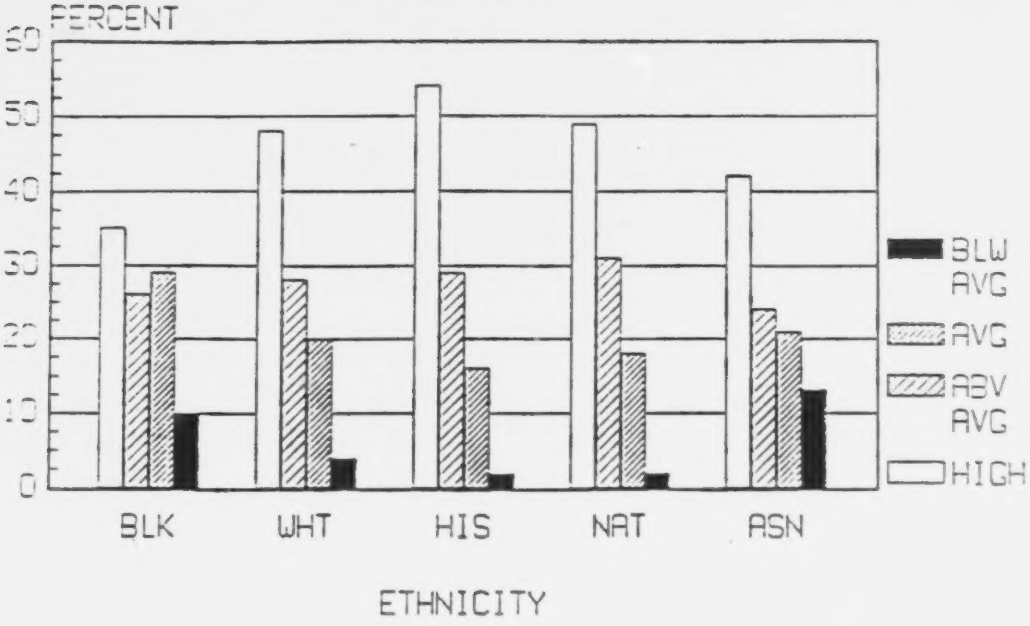


VAR 78 - SELF CONCEPT: CURRENT PHYSICAL HEALTH



VAR 76 - SELF CONCEPT:
CLOSENESS TO FAMILY



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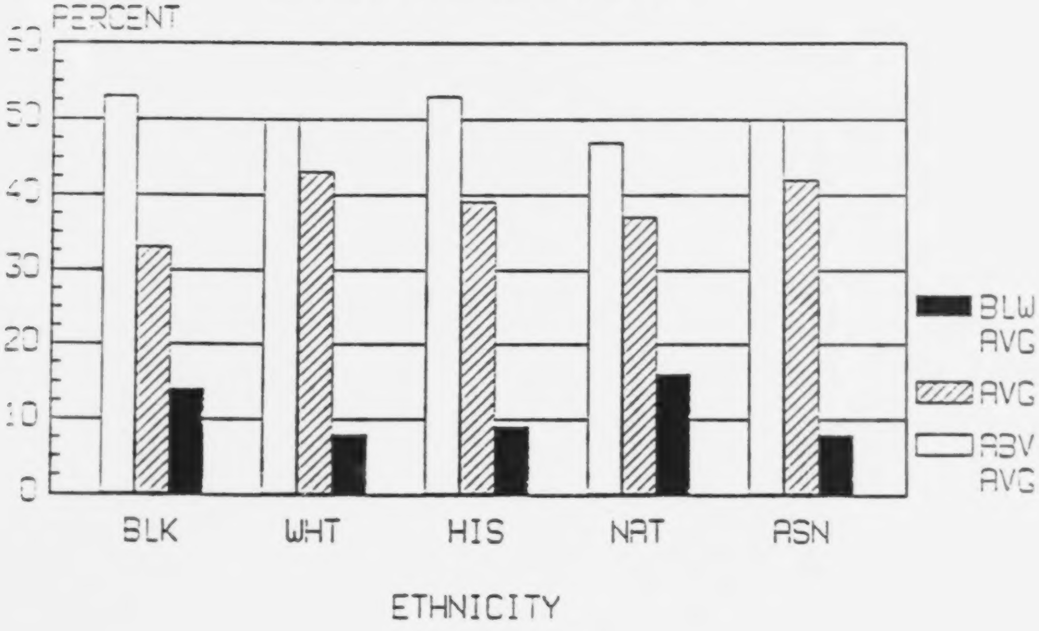
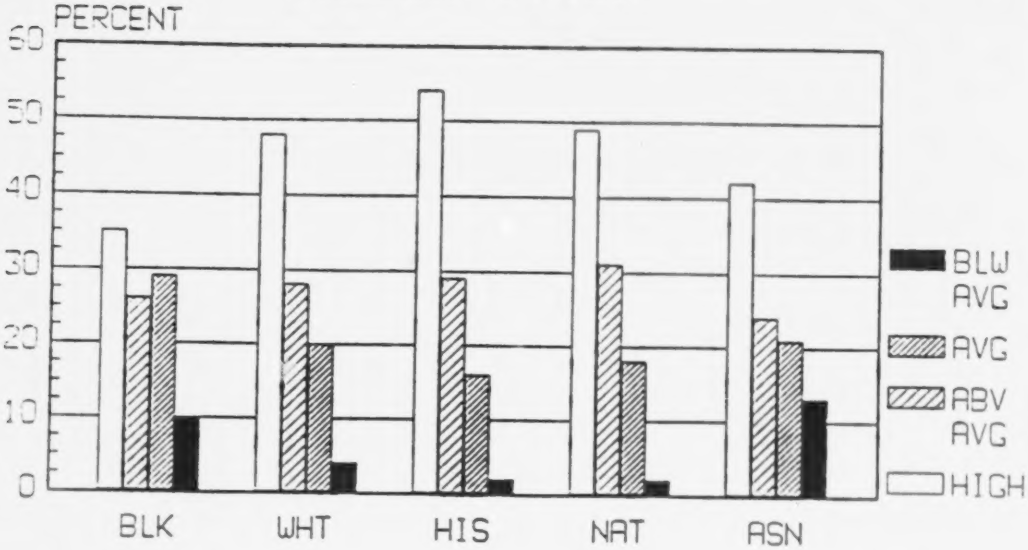
CURRENT PHYSICAL HEALTH

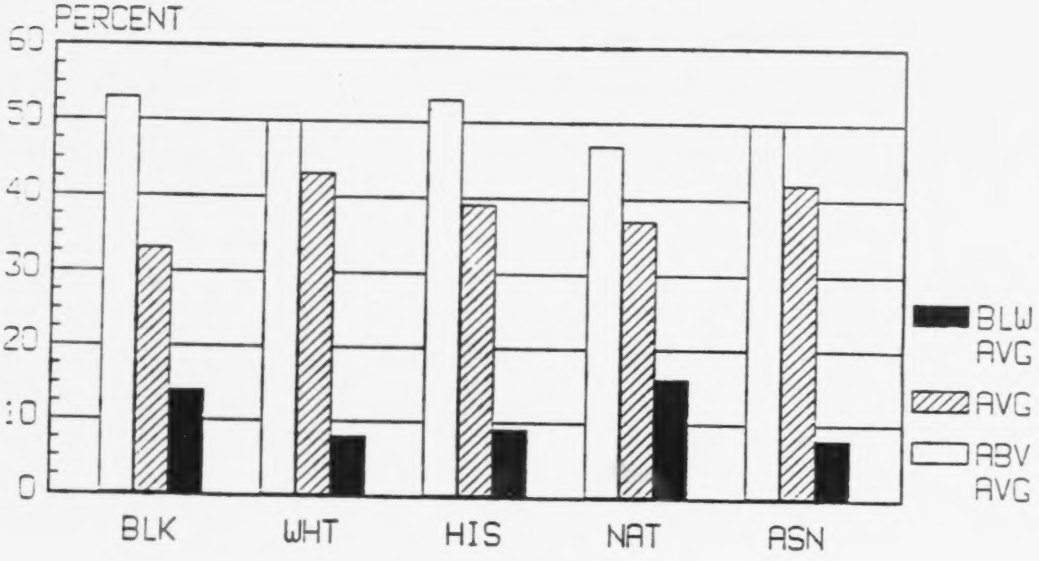


VAR 76 - SELF CONCEPT:
CLOSENESS TO FAMILY



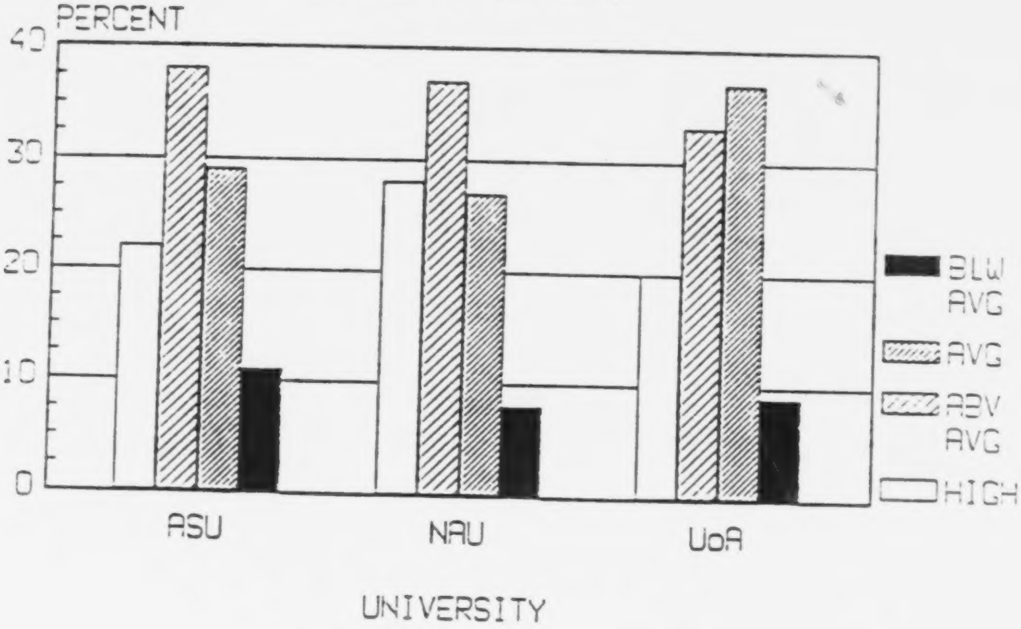
ETHNICITY

VAR 78 - SELF CONCEPT
CURRENT PHYSICAL HEALTH

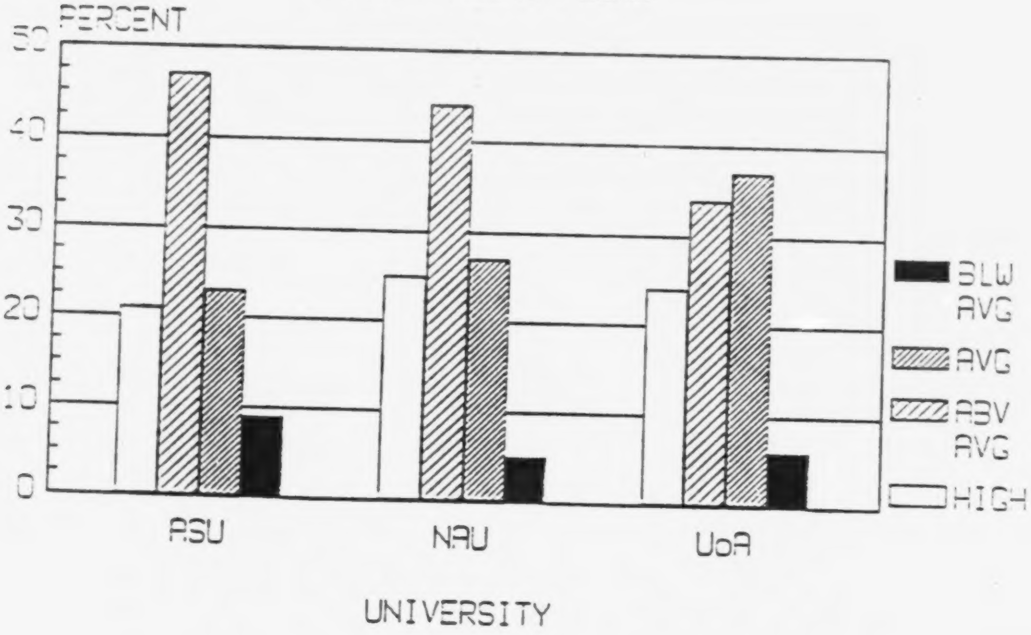


ETHNICITY

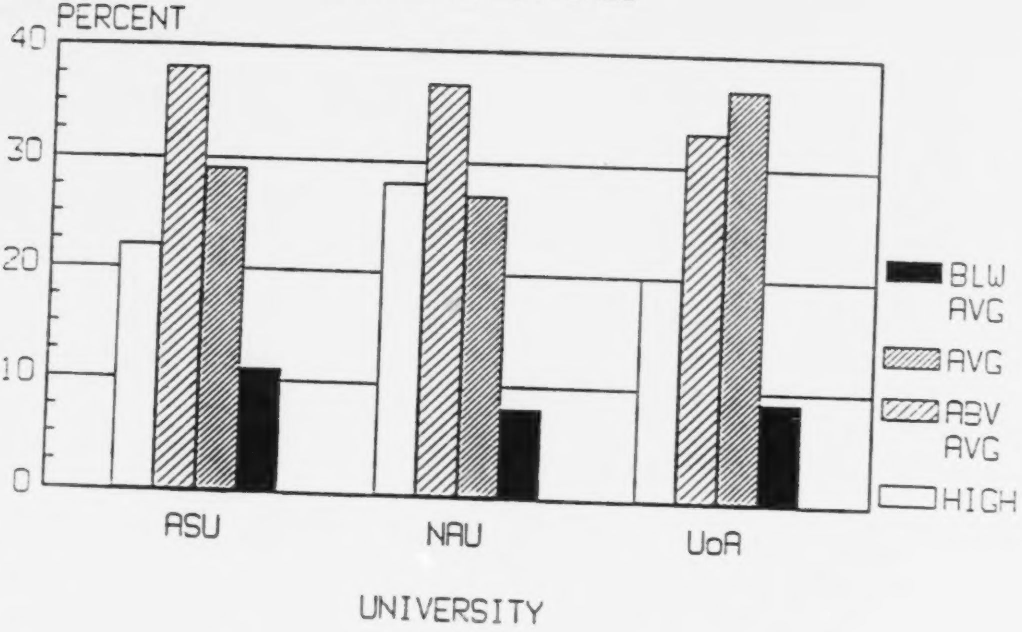
VAR 79 - SELF CONCEPT: SELF-CONFIDENCE IN SOCIAL SETTINGS



VAR 80 - SELF CONCEPT: LEADERSHIP ABILITY AMONG PEERS



VAR 79 - SELF CONCEPT: SELF-CONFIDENCE IN SOCIAL SETTINGS



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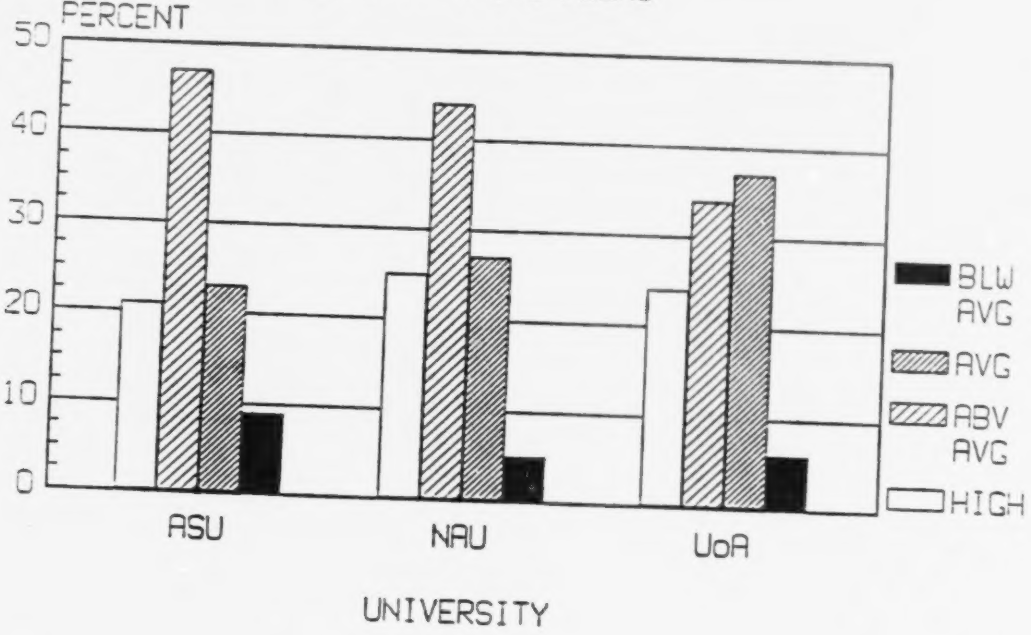
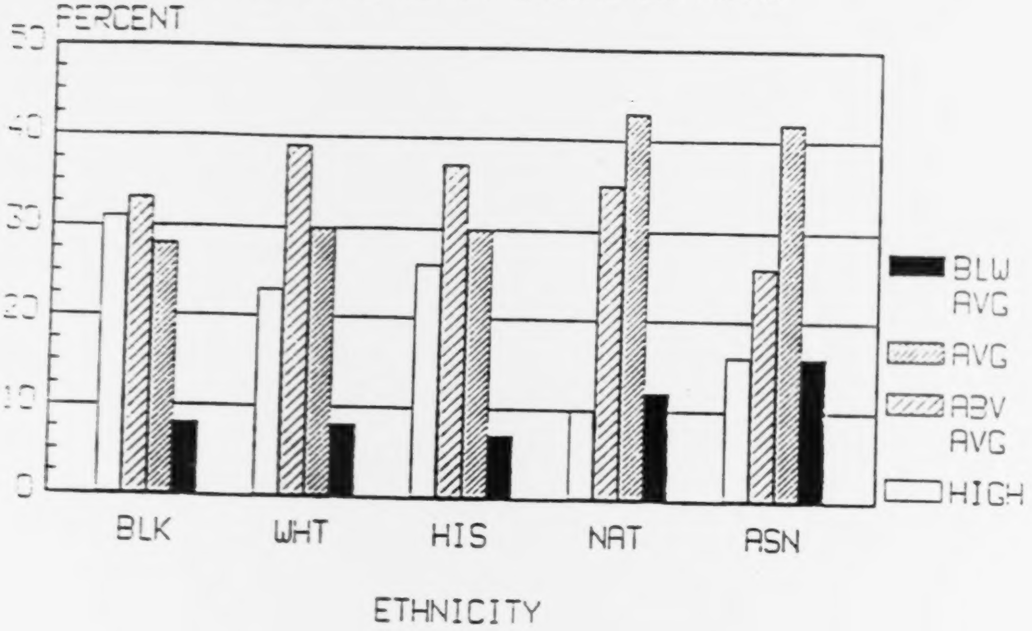
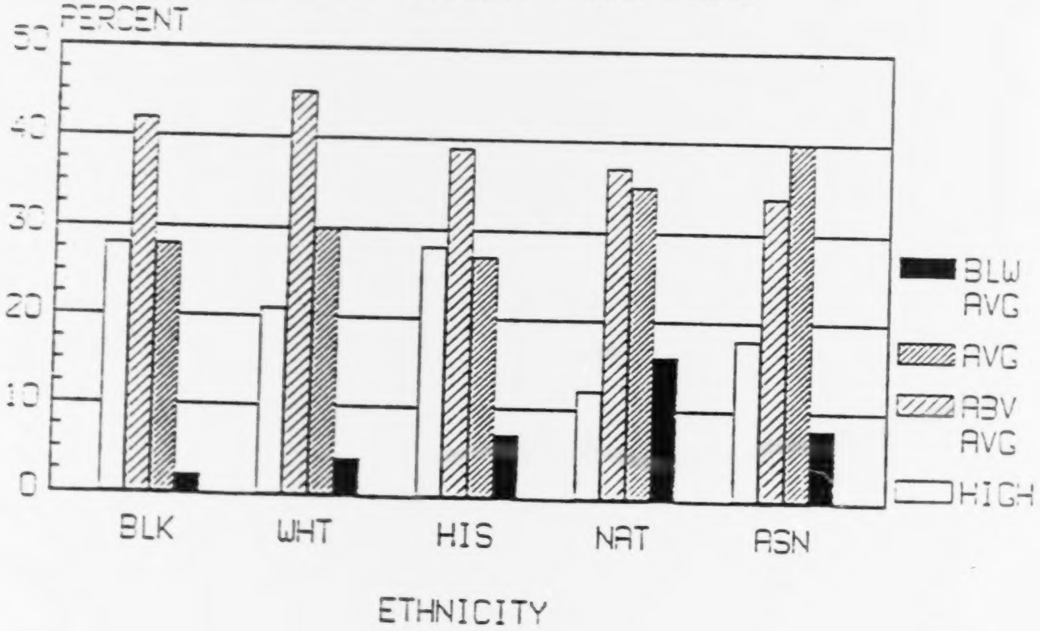


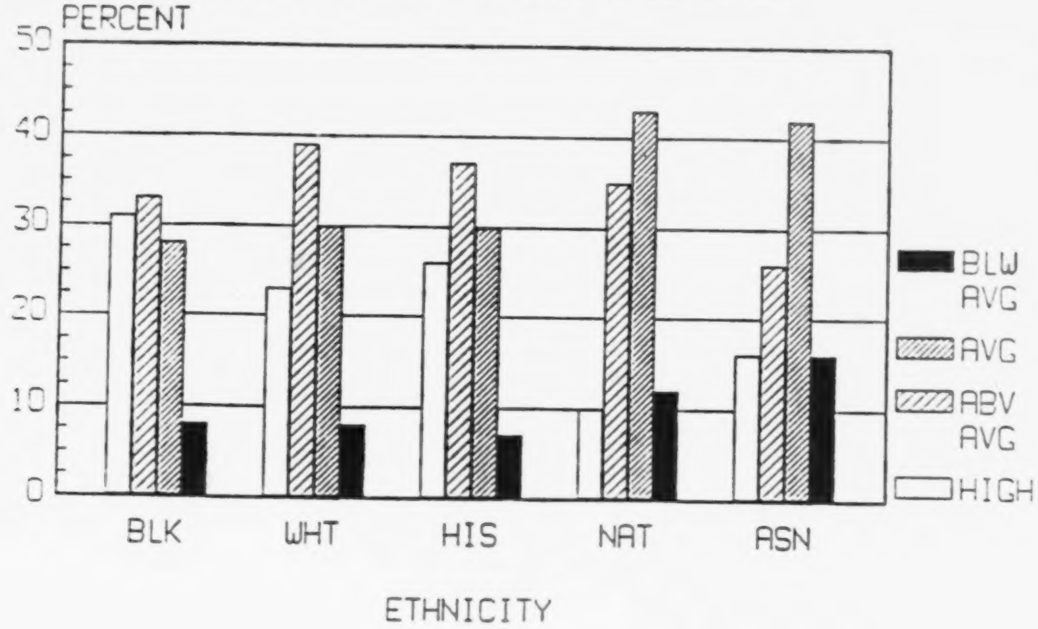


VAR 79 - SELF CONCEPT:
SELF-CONFIDENCE IN SOCIAL SETTINGS

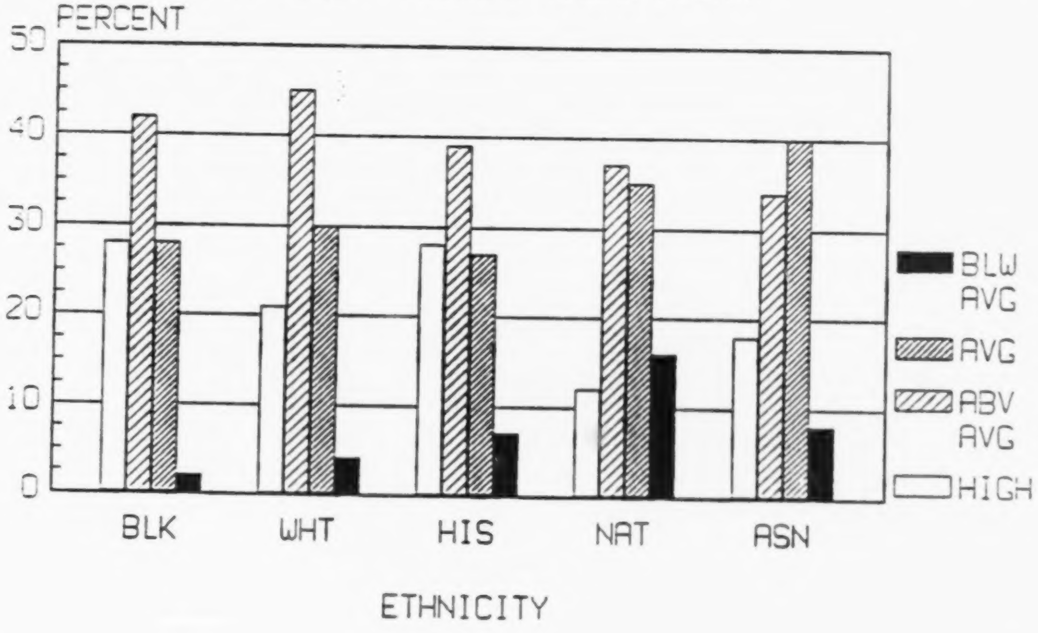


VAR 80 - SELF CONCEPT:
LEADERSHIP ABILITY AMONG PEERS

VAR 79 - SELF CONCEPT:
SELF-CONFIDENCE IN SOCIAL SETTINGS



VAR 80 - SELF CONCEPT:
LEADERSHIP ABILITY AMONG PEERS



ACADEMIC PREPARATION OF HIGH SCHOOL STUDENTS IN ARIZONA : MEAN NATIONAL CURVE EQUIVALENT SCORES (NCE) STANFORD ACHIEVEMENT TEST (SAT) 1986 - 1987

AUGUSTUS S. COTERA

The academic success of university students is dependent upon the academic and social preparation that they receive in primary and secondary school. Although considerable argument can be made that the preparation received in primary school is the more critical of the two experiences, this study is confined to the competency and performance of students at the secondary level, namely high school grades 9 - 12.

The main thrust of this study is an analysis of the performance of minority students in Arizona -- Black, Hispanic, Native American and Asian. However, for comparison purposes, data were also obtained for the White majority.

Computer tapes of test scores were purchased from the Psychological Test Corporation because complete data for students in all schools in all districts were simply not available. These data were processed by the Computer Center of Northern Arizona University and the resulting compilation was then analyzed using graphical software entitled "Graph in the Box". All presentations in this report at this time are made in the form of histograms designed to provide the reader with a readily understood graphical analysis.

Although analyses were done for all grade levels, the decision was made to present primarily 12th grade test results as this grade level is the last formal school experience before students enter higher education.

In reviewing the data, the decision was made to group school districts in intervals of 20 percent minority (Black, Hispanic, Native American, and Asian) student population. Using this 20 percent interval, the mean NCE scores

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in Reading Comprehension (RC), Total Mathematics (TM) and Total Language (TL) were then compared between ethnic groups, between schools and between districts. The reader will note however, that on the histograms presented in this report, these three basic skills are listed as READ, MATH and LANG respectively.

In order to discuss the results of the study to date, histograms have been grouped into appendices which will be discussed in commentary form for the purpose of providing the reader with various relationships and significant interactions between ethnic groups and between schools and districts. One caution which must be mentioned is that although the sample size is the total population in each grade, school and district, the variability in population from year to year has not been determined. Further, it must be kept in mind that on the day the test was administered, not all students in the total population were present. Thus the "Total NCOUNT" is representative only of those students present on the day of the test.

The discussion that follows consists of comments and observations with possible implications and potential conclusions that may be made. Each set of data comprising an appendix will thus be reviewed. The reader is urged to study the histogram while reading the discussion in order to understand the data, always recognizing that his or her analysis may differ from that of the author.

Finally, all data are presently in storage in the NAU main frame computer and may be accessed with sufficient lead time for programming. In addition, most down-loaded files are available on three and one-half inch diskettes in the Board of Regents office.

APPENDIX A

MEAN NCE FOR EACH ETHNIC GROUP IN ALL DISTRICTS

The set of five graphs permits performance comparison of the five ethnic student groups in the three basic skill areas, as compiled for all school districts in Arizona.

The first graph on page A-1 compares 1987 SAT scores on the three basic skills tests for 12th grade Hispanic students ONLY. The students have been grouped by 20 percent intervals of total NCOUNT of Hispanic students in all districts. In the first bar graph of skills, the number in parenthesis following the 20 percent interval represents the number of districts in the state having between 0 and 20 percent Hispanic students. The remaining four graphs also follow this format.

Examination of this graph indicates that Hispanic students in all districts, regardless of percent NCOUNT score between the 40th and 50th decile nationally. The scores of students in the 59 districts in the first 20 percent interval may be somewhat higher than those in the other district intervals, but the statistical difference is probably not significant. In general, there appears to be a consistent performance regardless of percent NCOUNT.

In contrast, performance of Native Americans, shown in the lower graph on page A-1, indicates a definite trend of decreased performance with increase in NCOUNT. It should also be noted that the level of overall performance in the basic skills is a full decile lower than that of Hispanics.

The two graphs on page A-2 indicate that Black and Asian students in the 99 school districts of Arizona are enrolled in districts with 0-20 percent Black or Asian students. The Black students perform at the upper margin of the 40th decile, somewhere between the Hispanic and Native American students. Performance of Asian students is at the 50th decile in Reading and Language but at the 60th decile in Mathematics.

Performance of White students is depicted on the graph on page A-3 and indicates no definite variation with percent NCOUNT, although a slight difference is suggested in the 16 districts in which the percent of White students is less than 20 percent. Correspondingly, performance in the 21 districts having 60-80 percent White students also shows a somewhat higher performance level. It should be noted that in no district interval is the performance in Mathematics greater than that of the Asian group.

The major purpose in presenting the data in Appendix A is to provide the reader with an overall view of performance level within each group and the variation between groups.

APPENDIX A - APPENDICES

A-1 Hispanic Mean NCE - 12th Grade - 1987

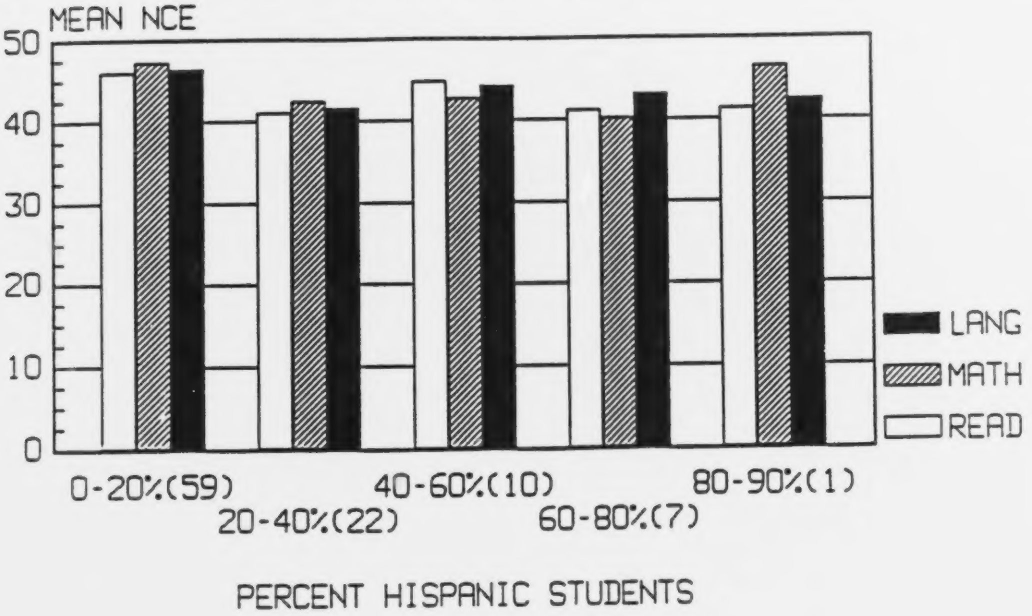
A-1 Native American Mean NCE - 12th Grade - 1987

A-2 Black Mean NCE - 12th Grade - 1987

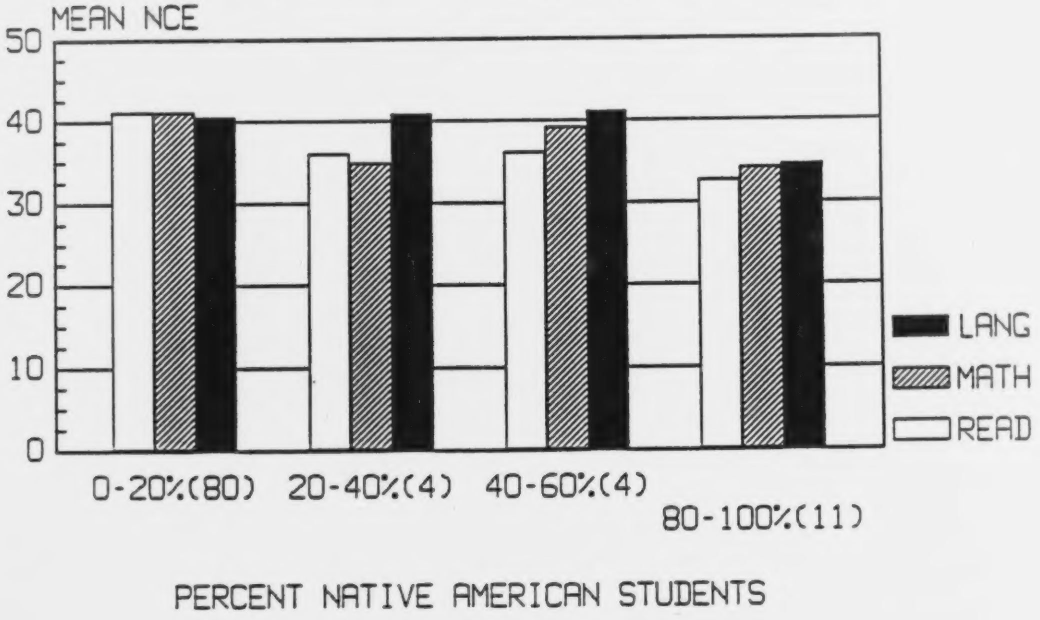
A-2 Asian Mean NCE - 12th Grade - 1987

A-3 White Mean NCE - 12th Grade - 1987

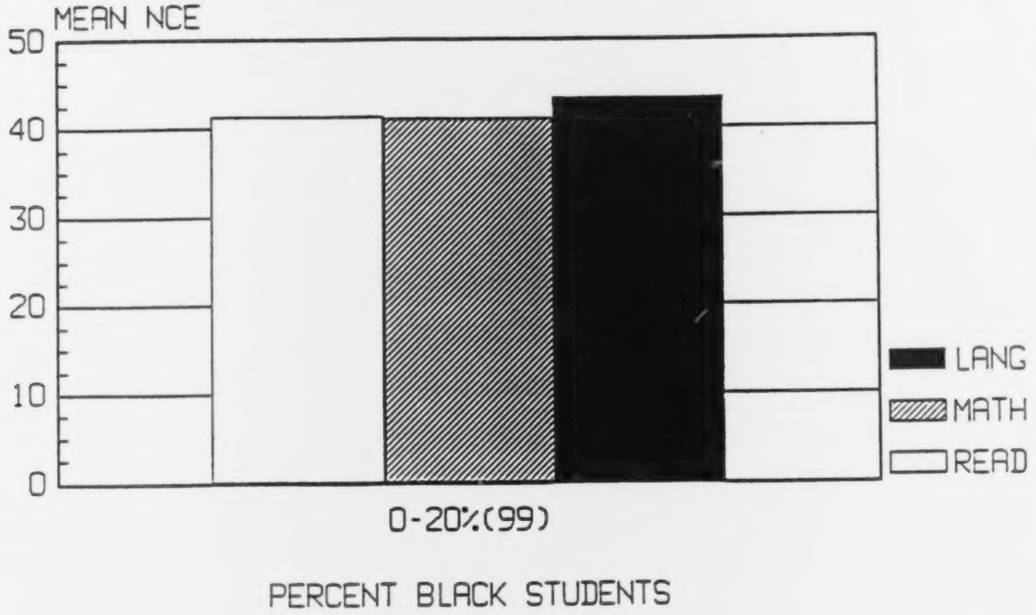
HISPANIC MEAN NCE - 12TH GRADE 1987
ALL DISTRICTS IN ARIZONA



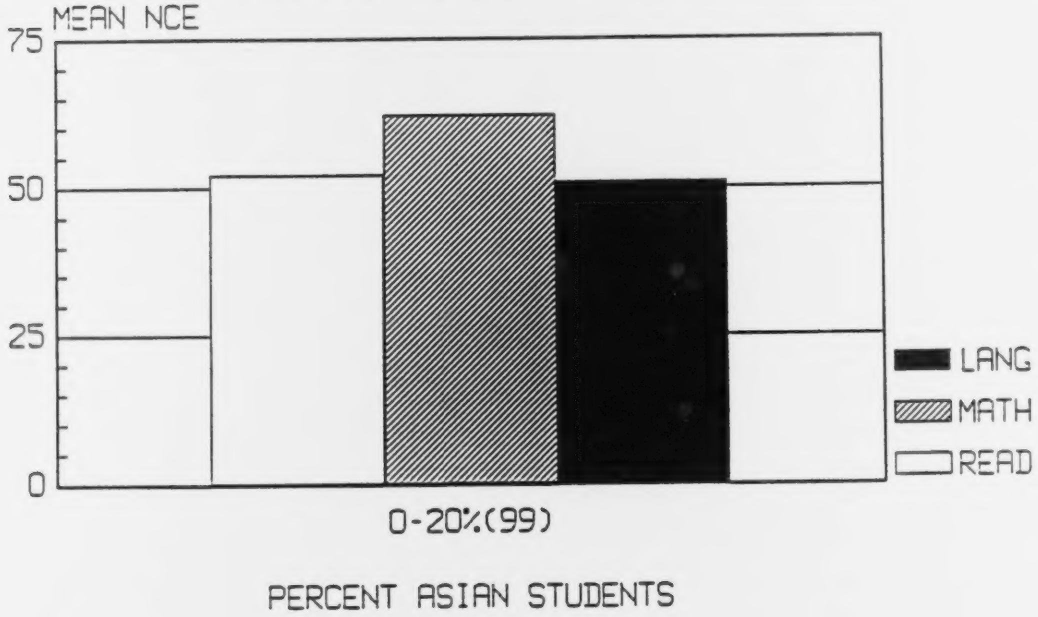
NATIVE AMERICAN MEAN NCE - 12TH GRADE
1987 ALL DISTRICTS IN ARIZONA



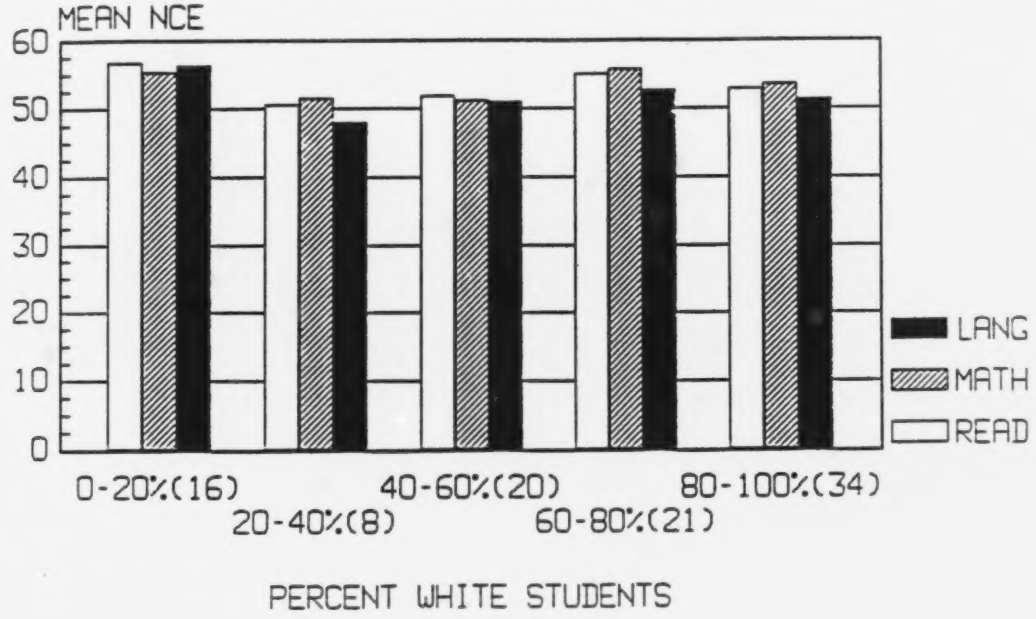
BLACK MEAN NCE - 12TH GRADE 1987
ALL DISTRICTS IN ARIZONA



ASIAN MEAN NCE - 12TH GRADE 1987
ALL DISTRICTS IN ARIZONA



WHITE MEAN NCE - 12TH GRADE 1987
ALL DISTRICTS IN ARIZONA



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APPENDIX B

MEAN NCE AND STANDARD DEVIATION

BY ETHNICITY IN ALL DISTRICTS

12TH GRADE

1986 & 1987

The data in this appendix are a refinement and extension of data in the previous appendix in that they show the performance on test scores of all 12th grade students in all districts by ethnic group, by 20 percent interval and by year (1986 & 1987). In addition the mean NCE distribution is presented in the upper graph with the corresponding standard deviation in the lower graph, in order for the reader to be able to note the range of variability within each ethnic group and in each basic skill area within that ethnic group.

The number in parentheses following the ethnic group, plotted on the "X" axis, indicates the number of observations, that is, the number of districts in which the percent NCOUNT of students in the particular group is within the 20 percent interval for this pair of graphs.

Thus pages B-1 and B-2 contain graphs for all districts by ethnic 12th grade student populations in the 0-20 percent interval for the years 1986 and 1987 respectively.

With regard to B-1 and B-2, it is self-evident that Asian and White students score higher than the other three groups in all areas and that the mean scores do not differ significantly between years. In the lower graphs showing standard deviation, the standard deviation value in Math and Language for Asian students in 1986 is incredibly large. The reason for this large variation in performance is not known but one may surmise that the recent immigration of Asian people might have resulted in a large range in academic ability of the students in this population because of a delay in adapting to the language. It is interesting that the general ability in Math as indicated by the Mean NCE is still higher than that of White students. In the 1987 data, the standard deviation is more normal across the ethnic groups, except for the Hispanics and somewhat for the Native Americans, indicating a higher degree of uniformity in these two groups.

In the 20-40 percent interval, shown on pages B-3 & B-4, there are no districts having Asian and Black students in this percentage interval. The data are consistent between years as indicated by the similarity between all four graphs. Again, the White groups are distinctively different from the other two groups.

In the 40-50 percent interval, shown on pages B-5 & B-6, there is again a consistency in mean NCE between years and between ethnic groups in each year. The White group is dominant and the differences between the Hispanic and Native American groups does not appear to be significant. In the measure of standard deviation, however, the differences are significant and somewhat erratic and unexplainable. In 1986, the standard deviation for the Hispanic group is extraordinary in Math and Language. A mechanical or computer error is suspected because the values are too high by about one decimal point of magnitude. The standard deviation for 1987 are all within the range of expected values except for the slight increase in Reading and Language for the Native American students which is not significant.

In the 60-80 percent interval (B-7 & B-8), the disparity between the performance in districts with Hispanic student populations in this range with those of White populations is quite definitive. It is noteworthy that there are no districts in this interval having Native American students in these percentages.

Similarly, in the 80-100 percent interval, the disparity between the White group and Hispanic group is consistent and considerably more pronounced when compared with the Native American group. The differences are in the order of one decile between each group. Again the standard deviation for Hispanics in the 1986 data are suspect. Most likely an error was made in computer input.

On the basis of this set of data, it is evident that in districts having low (0-20%) ethnic enrollments across the five ethnic groups, SAT scores are lower in absolute values and there is a lower degree of variation between groups. In districts with higher (60-80% & 80-100%) ethnic populations, the disparity between segregated schools have students who perform at distinctly different levels on standardized tests in the areas of Reading, Math and Language.

APPENDIX B - APPENDICES

B-1 Mean NCE - 12th Grade - 1986 by Ethnicity of 0-20 Percent

B-1 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 0-20 Percent

B-2 Mean NCE - 12th Grade - 1987 by Ethnicity of 0-20 Percent

B-2 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 0-20 Percent

B-3 Mean NCE - 12th Grade - 1986 by Ethnicity of 20-40 Percent

B-3 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 20-40 Percent

B-4 Mean NCE - 12th Grade - 1987 by Ethnicity of 20-40 Percent

B-4 Standard
Deviation - 12th Grade - 1987 by Ethnicity of 20-40 Percent

B-5 Mean NCE - 12th Grade - 1986 by Ethnicity of 40-60 Percent

B-5 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 40-60 Percent

B-6 Mean NCE - 12th Grade - 1987 by Ethnicity of 40-60 Percent

B-6 Standard
Deviation - 12th Grade - 1987 by Ethnicity of 40-60 Percent

B-7 Mean NCE - 12th Grade - 1986 by Ethnicity of 60-80 Percent

B-7 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 60-80 Percent

B-8 Mean NCE - 12th Grade - 1987 by Ethnicity of 60-80 Percent

B-8 Standard
Deviation - 12th Grade - 1986 by Ethnicity of 60-80 Percent

B-9 Mean NCE - 12th Grade - 1986 by Ethnicity of 80-100 Percent

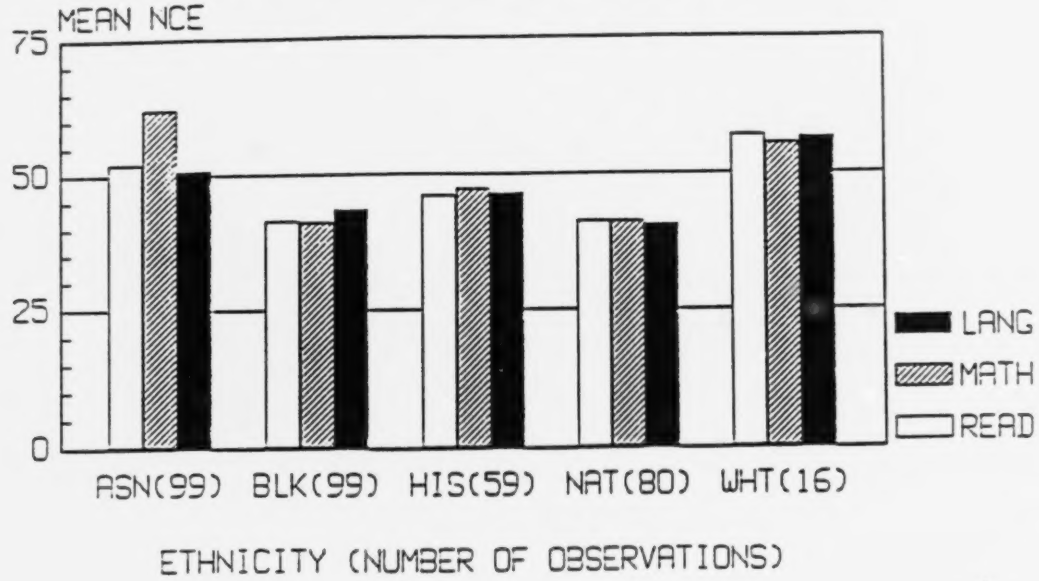
B-9 Standard Deviation - 12th Grade - 1986 by Ethnicity of 80-100 Percent

B-10 Mean NCE - 12th Grade - 1987 by Ethnicity of 80-100 Percent

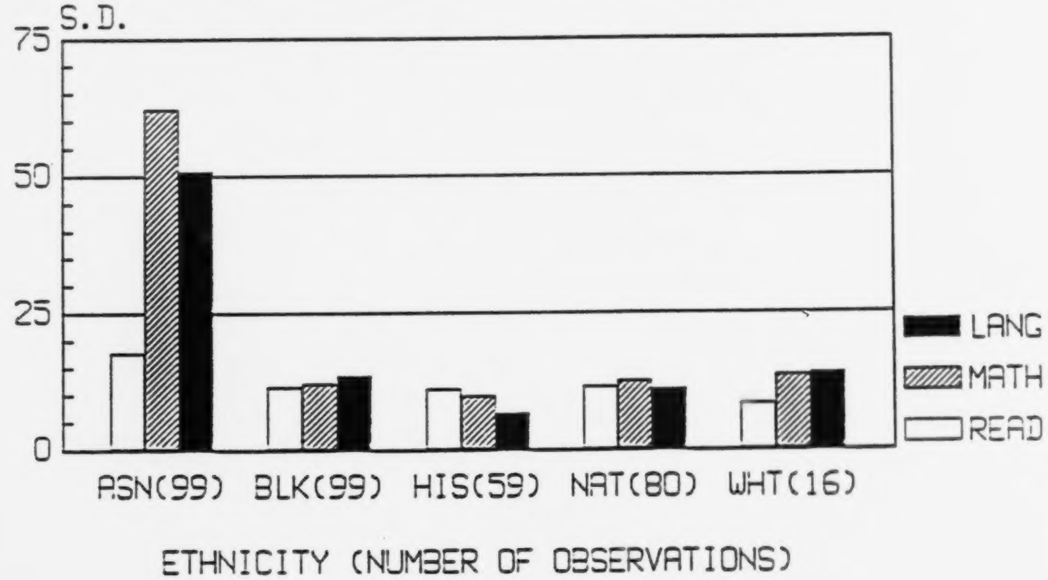
B-10 Standard Deviation - 12th Grade - 1987 by Ethnicity of 80-100 Percent

B-1

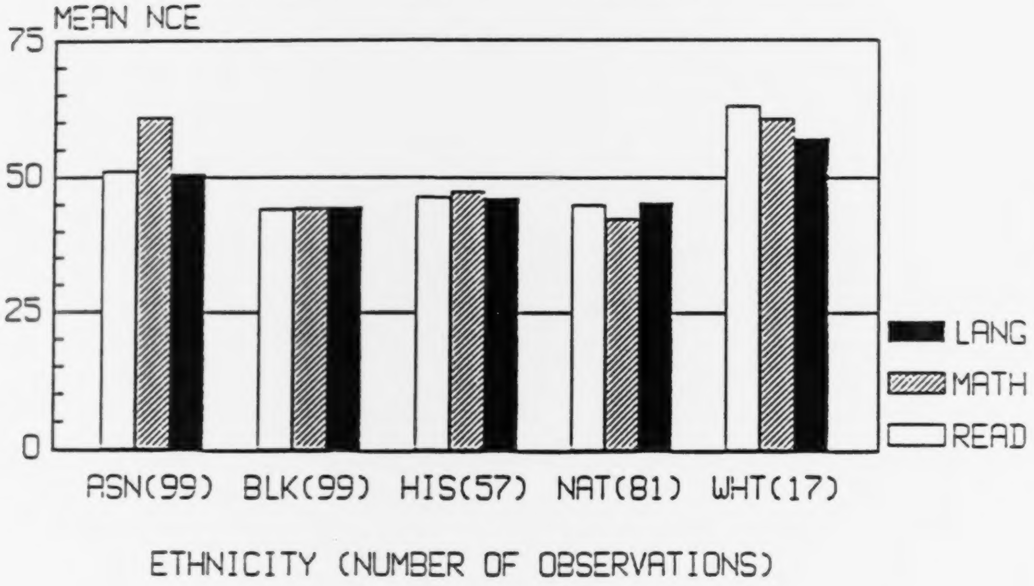
MEAN NCE - 12TH GRADE 1986
BY ETHNICITY OF 0-20 PERCENT
FOR ALL DISTRICTS IN ARIZONA



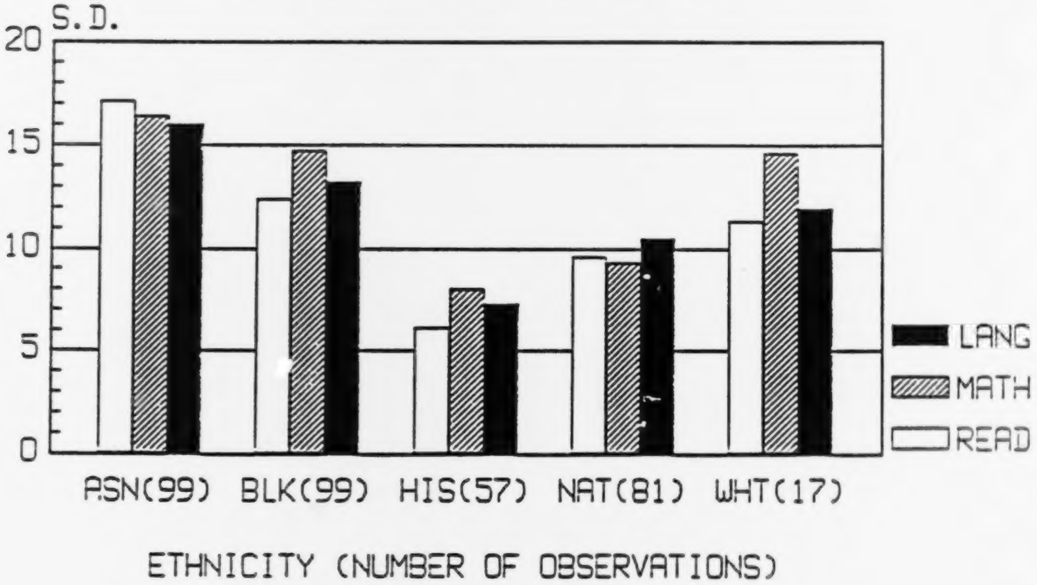
STANDARD DEVIATION - 12TH GRADE 1986
BY ETHNICITY OF 0-20 PERCENT
FOR ALL DISTRICTS IN ARIZONA



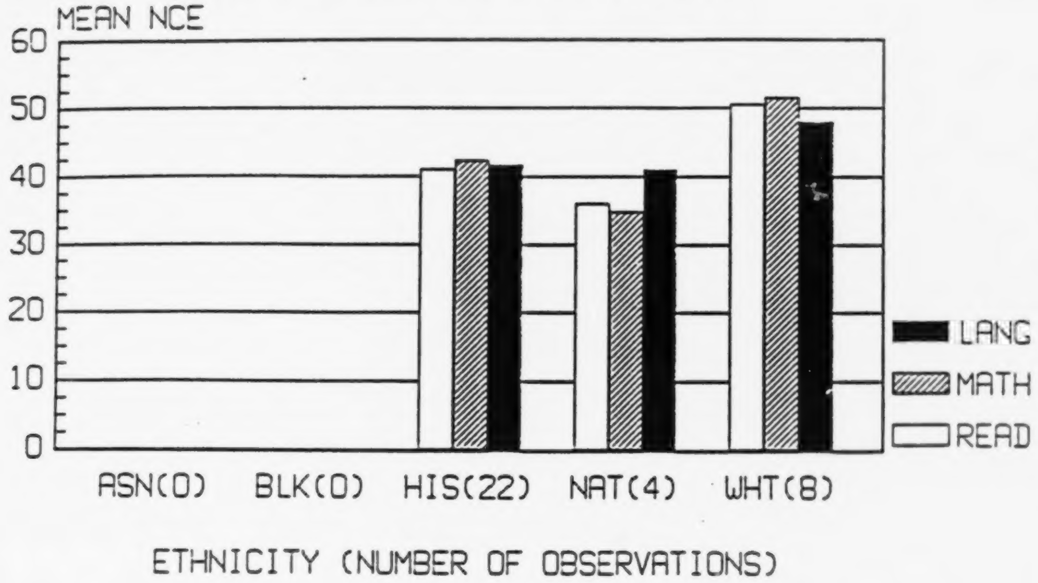
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY OF 0-20 PERCENT
FOR ALL DISTRICTS IN ARIZONA



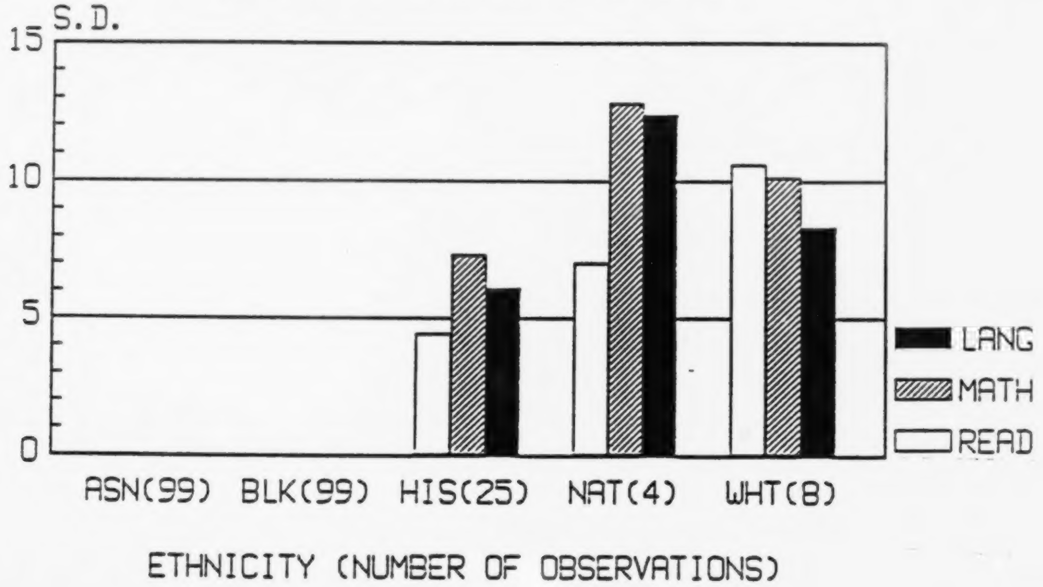
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY OF 0-20 PERCENT
FOR ALL DISTRICTS IN ARIZONA

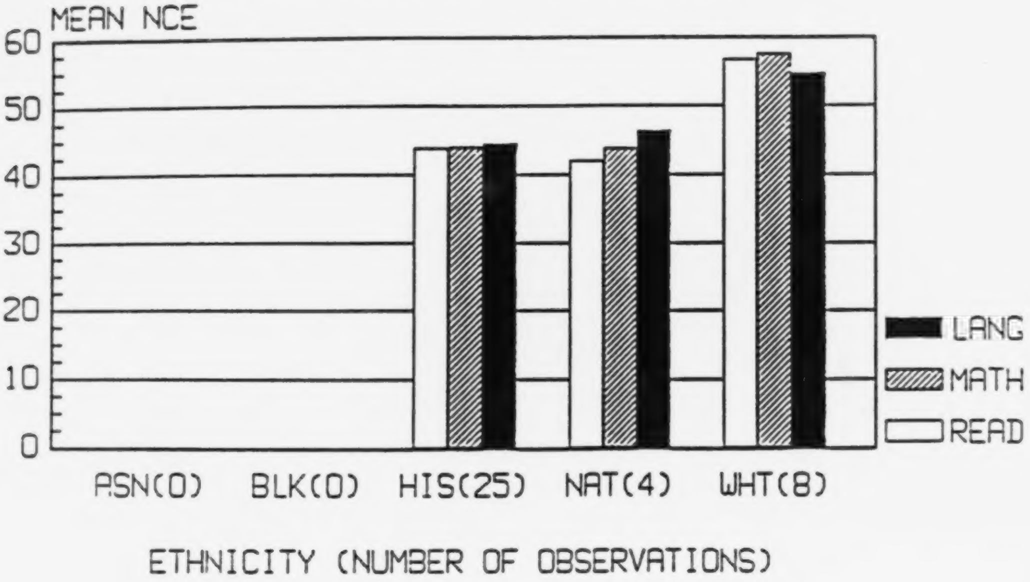


MEAN NCE - 12TH GRADE 1986
BY ETHNICITY OF 20-40 PERCENT
FOR ALL DISTRICTS IN ARIZONA

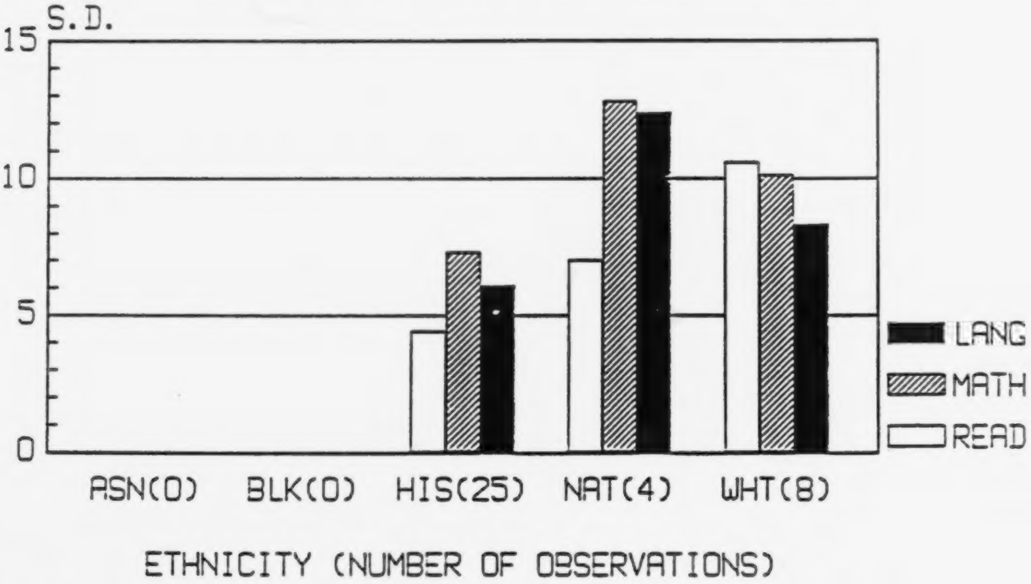


STANDARD DEVIATION - 12TH GRADE 1986
BY ETHNICITY OF 20-40 PERCENT
FOR ALL DISTRICTS IN ARIZONA





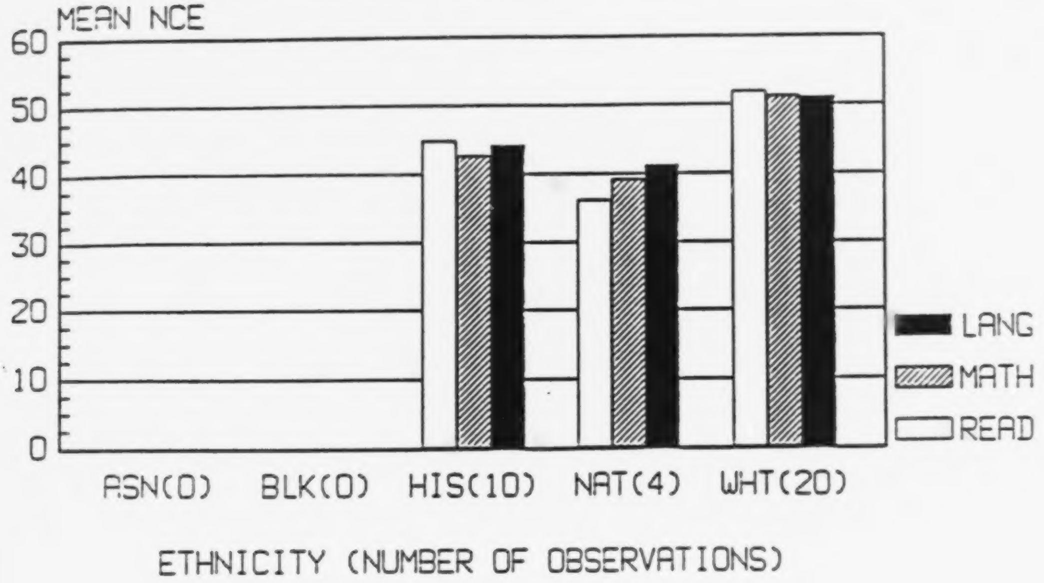
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY OF 20-40 PERCENT
FOR ALL DISTRICTS IN ARIZONA



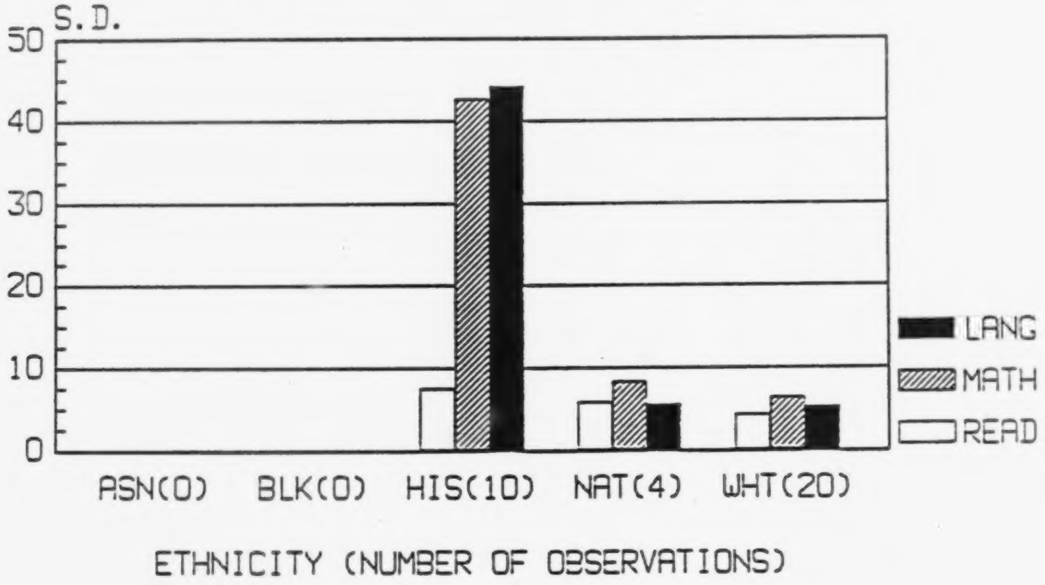
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY OF 20-40 PERCENT
FOR ALL DISTRICTS IN ARIZONA

B-5

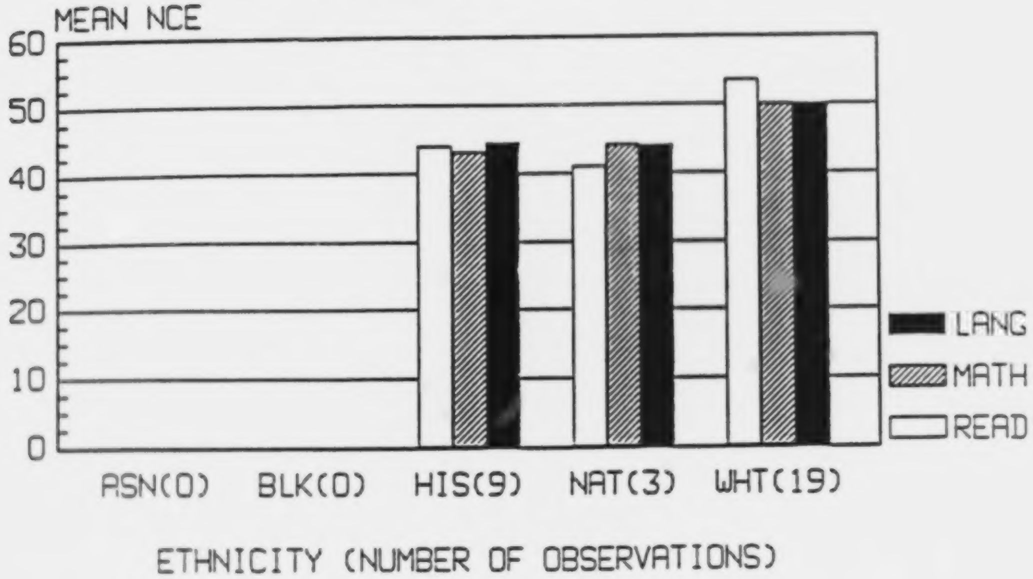
MEAN NCE - 12TH GRADE 1986
BY ETHNICITY OF 40-60 PERCENT
FOR ALL DISTRICTS IN ARIZONA



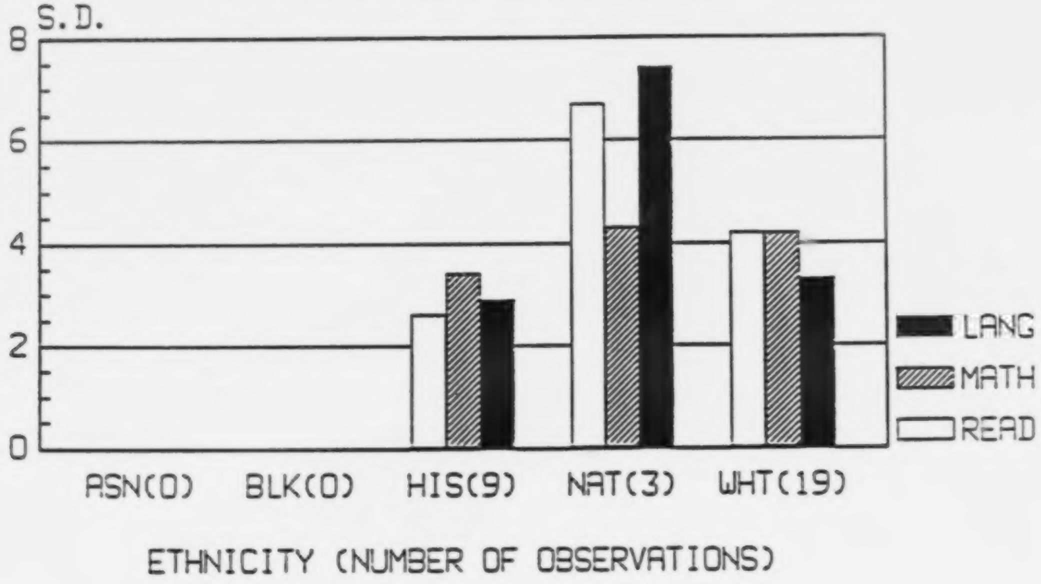
STANDARD DEVIATION - 12TH GRADE 1986
BY ETHNICITY OF 40-60 PERCENT
FOR ALL DISTRICTS IN ARIZONA



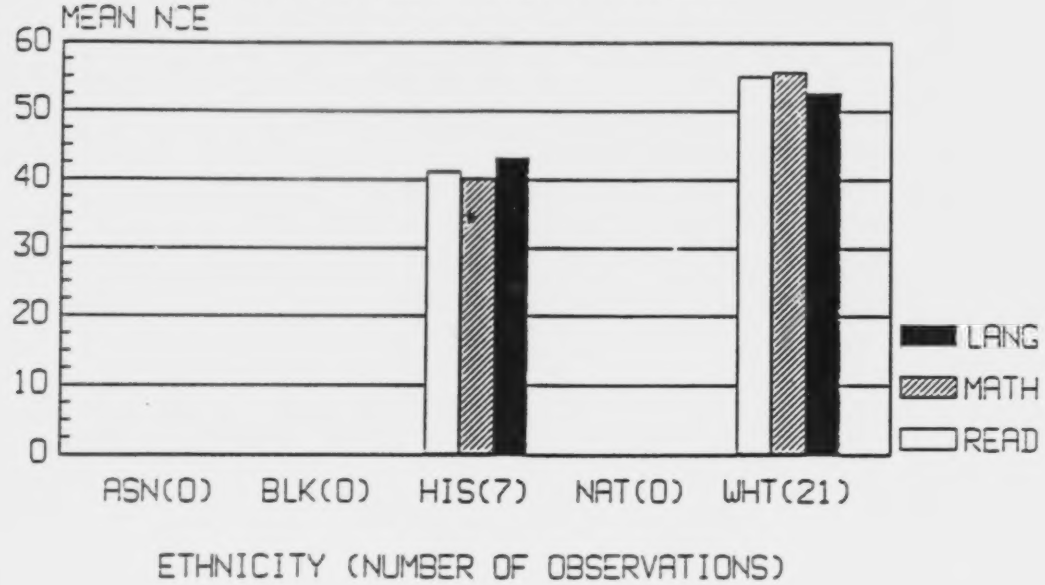
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY OF 40-60 PERCENT
FOR ALL DISTRICTS IN ARIZONA



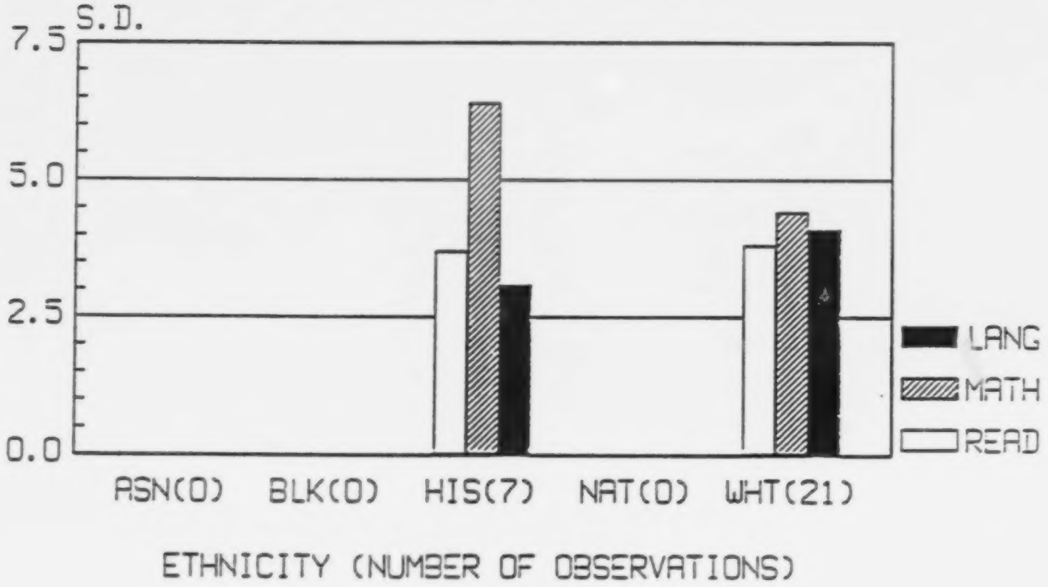
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY 40-60 PERCENT
FOR ALL DISTRICTS IN ARIZONA



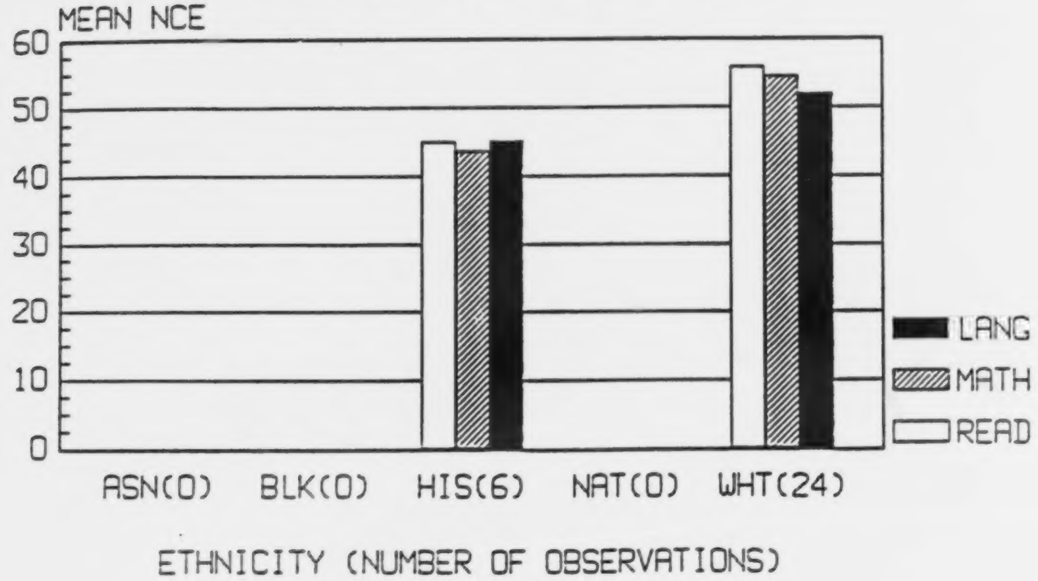
MEAN NCE - 12TH GRADE 1986
BY ETHNICITY OF 60-80 PERCENT
FOR ALL DISTRICTS IN ARIZONA



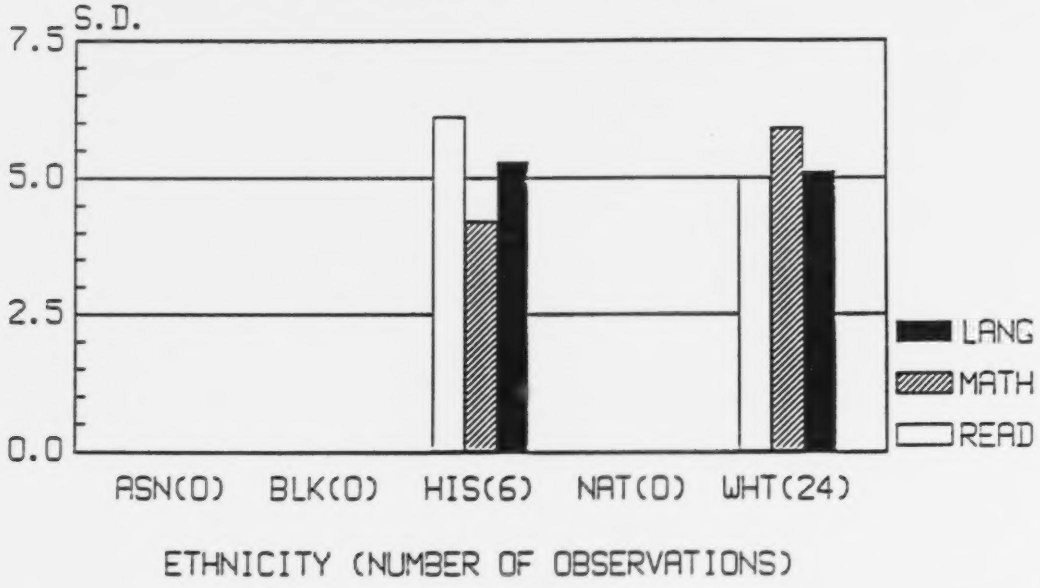
STANDARD DEVIATION - 12TH GRADE 1986
BY ETHNICITY OF 60-80 PERCENT
FOR ALL DISTRICTS IN ARIZONA



MEAN NCE - 12TH GRADE 1987
BY ETHNICITY OF 60-80 PERCENT
FOR ALL DISTRICTS IN ARIZONA

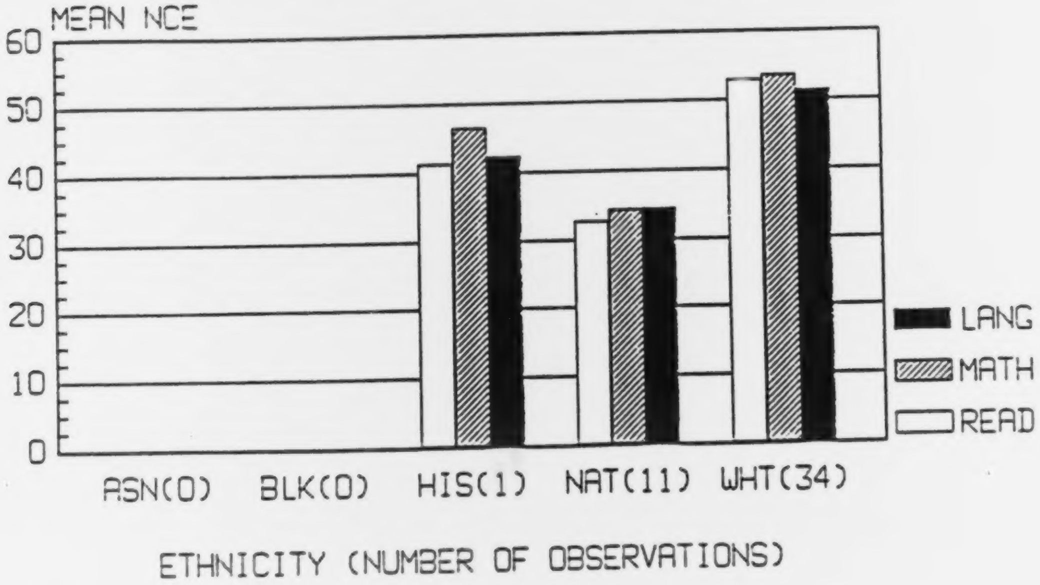


STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY OF 60-80 PERCENT
FOR ALL DISTRICTS IN ARIZONA

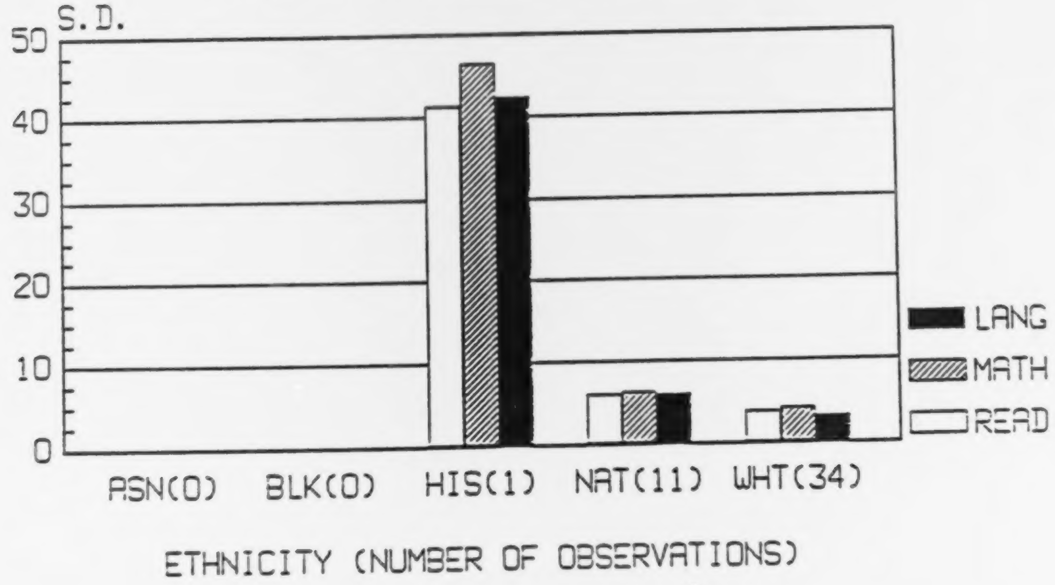


B-9

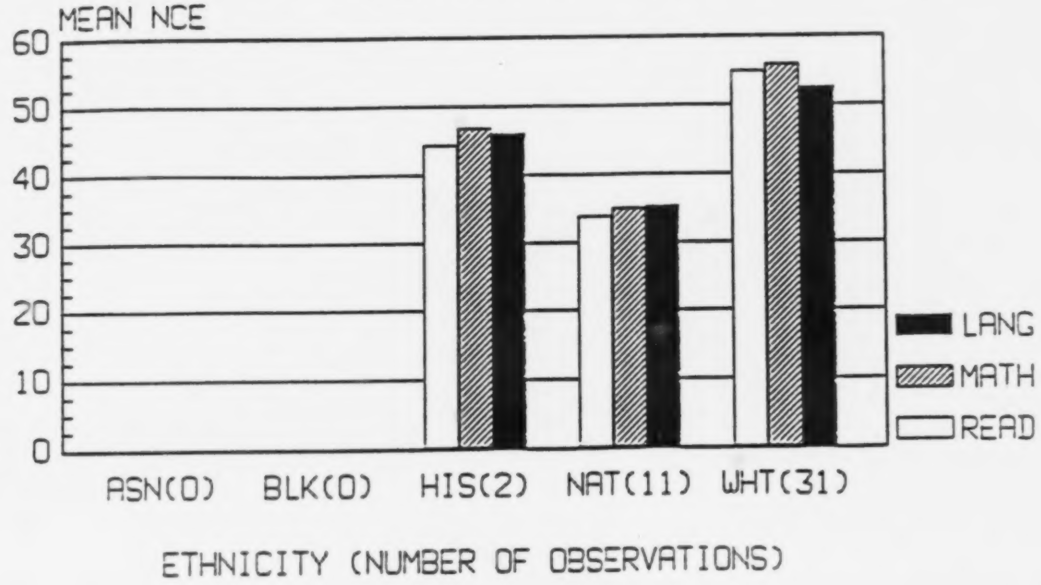
MEAN NCE - 12TH GRADE 1986
BY ETHNICITY OF 80-100 PERCENT
FOR ALL DISTRICTS IN ARIZONA



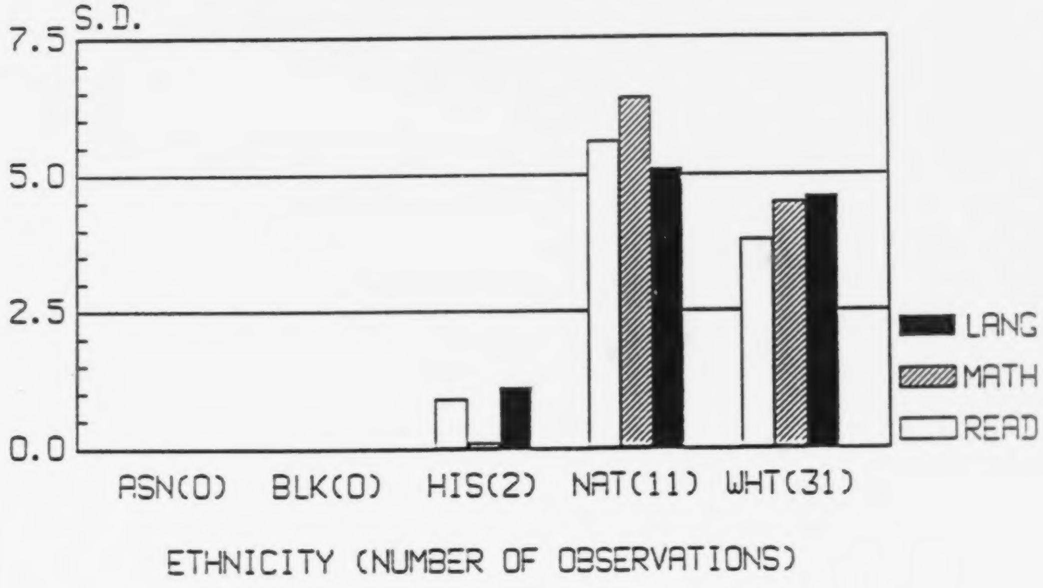
STANDARD DEVIATION - 12TH GRADE 1986
BY ETHNICITY OF 80-100 PERCENT
FOR ALL DISTRICTS IN ARIZONA



MEAN NCE - 12TH GRADE 1987
BY ETHNICITY OF 80-100 PERCENT
FOR ALL DISTRICTS IN ARIZONA



STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY OF 80-100 PERCENT
FOR ALL DISTRICTS IN ARIZONA



APPENDIX C

MEAN NCE AND STANDARD DEVIATION FOR PHOENIX UNION HIGH SCHOOL DISTRICT SCHOOLS

12TH GRADE - 1987

Because of the large population, ethnic variability and general complexity of the Phoenix Union High School District, the mean NCE scores were analyzed by school rather than simply for the entire district. Although the Native American and Asian population is relatively small, the variation in Hispanic and Black populations is sufficiently significant to warrant closer study. The reader should note that the number in parentheses following the ethnic group on the "X" axis indicates the percent of students of that ethnic group in the 12th grade in that particular school. Also, the total number of students in the 12th grade is given at the top of each graph. Again, the standard deviation for each ethnic group by basic skill is provided in the lower graph on each page.

In analyzing the scores of the ethnic groups in the eight schools studied, it is evident that the very small percentages of Asian and Native American students do not warrant extensive generalization. Perhaps, the major point that can be made is that Asian students perform as well or better than White students and, in a few schools, Native American students also perform well. However, the numbers are too small to indicate defensible conclusions.

With regard to the Hispanic and Black populations, the results are more distinct. In general these two ethnic groups have consistently lower scores than their White cohort, but in some schools the difference is less distinct, e.g., Alhambra, Trevor Browne, Maryvale and North High.

In the former schools, the performance of Blacks is not significantly different from that of Whites; however, the percentage of Black students is too small to warrant generalization. In Carl Hayden and Central, the performance of Black students is distinctly lower than White students and their relative percentages are similar.

In South Mountain school, the percentage of Black students is highest and their scores are the lowest of any school in the district. Interestingly, the scores of the White students at South Mountain are among the highest of any school in the district, probably because South Mountain is a magnet school for the arts.

The performance of Hispanic students is consistently below that of White students, but in some schools, e.g., Trevor Brown, Maryvale and North, their performance is somewhat comparable.

Although further study is needed, it would appear that the concentration of Hispanics and Blacks may be correlative with their performance on basic skill test scores, that is, the greater the concentration, the lower the scores.

APPENDIX C - APPENDICES

C-1 Mean NCE by Ethnicity for Alhambra High School

C-1 Standard
Deviation by Ethnicity for Alhambra High School

C-2 Mean NCE by Ethnicity for Camelback High School

C-2 Standard
Deviation by Ethnicity for Camelback High School

C-3 Mean NCE by Ethnicity for Trevor Browne High School

C-3 Standard
Deviation by Ethnicity for Trevor Browne High School

C-4 Mean NCE by Ethnicity for Central High School

C-4 Standard
Deviation by Ethnicity for Central High School

C-5 Mean NCE by Ethnicity for Carl Hayden High School

C-5 Standard
Deviation by Ethnicity for Carl Hayden High School

C-6 Mean NCE by Ethnicity for Maryvale High School

C-6 Standard
Deviation by Ethnicity for Maryvale High School

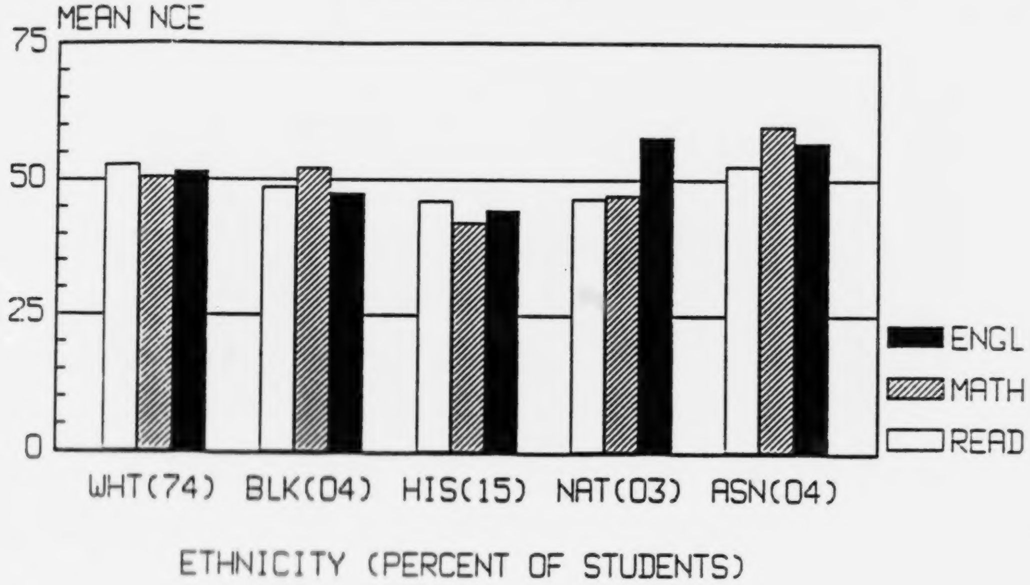
C-7 Mean NCE by Ethnicity for North High School

C-7 Standard
Deviation by Ethnicity for North High School

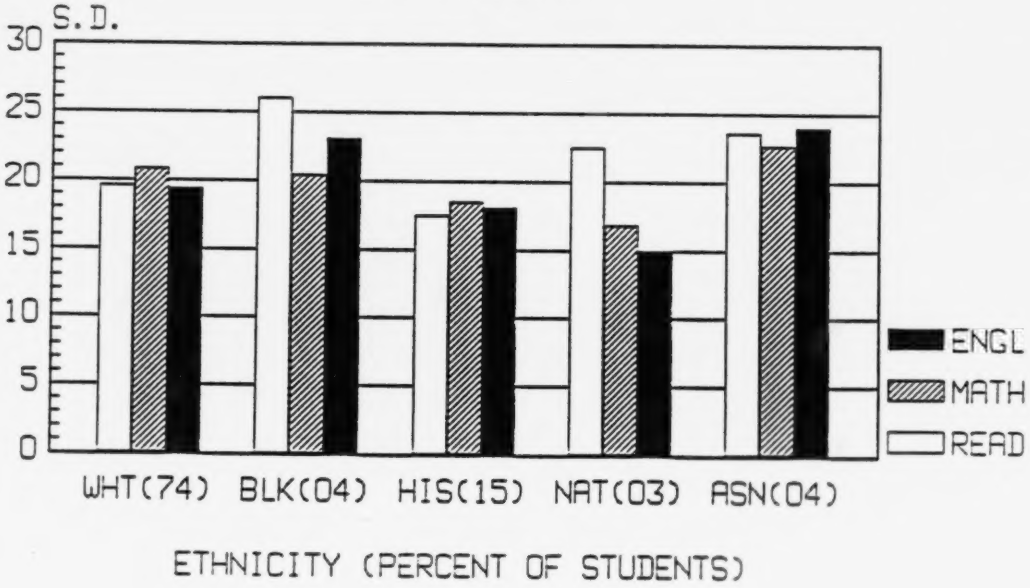
C-8 Mean NCE by Ethnicity for South Mountain High School

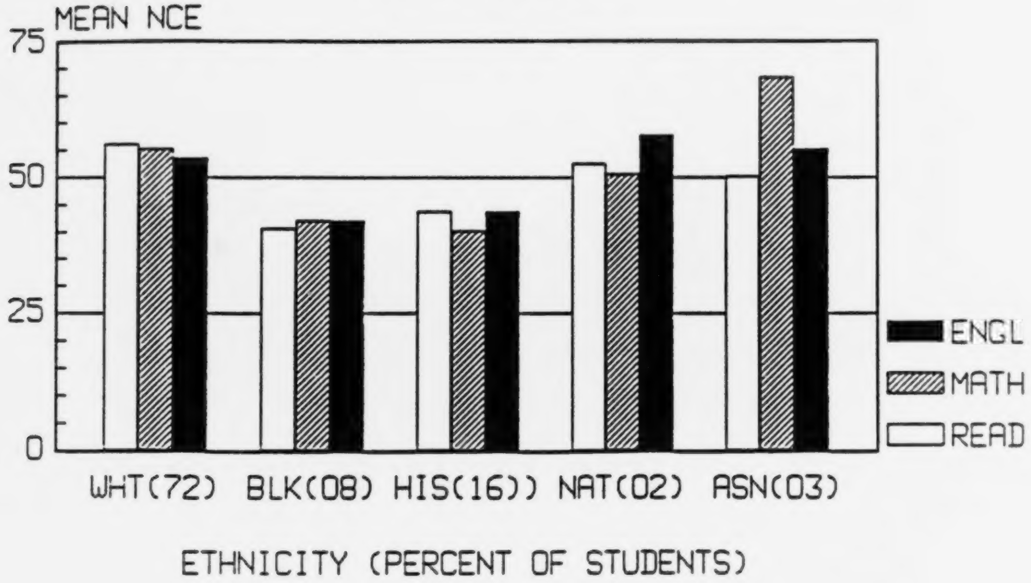
C-8 Standard
Deviation by Ethnicity for South Mountain High School

MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR ALHAMBRA HIGH SCHOOL
345 STUDENTS

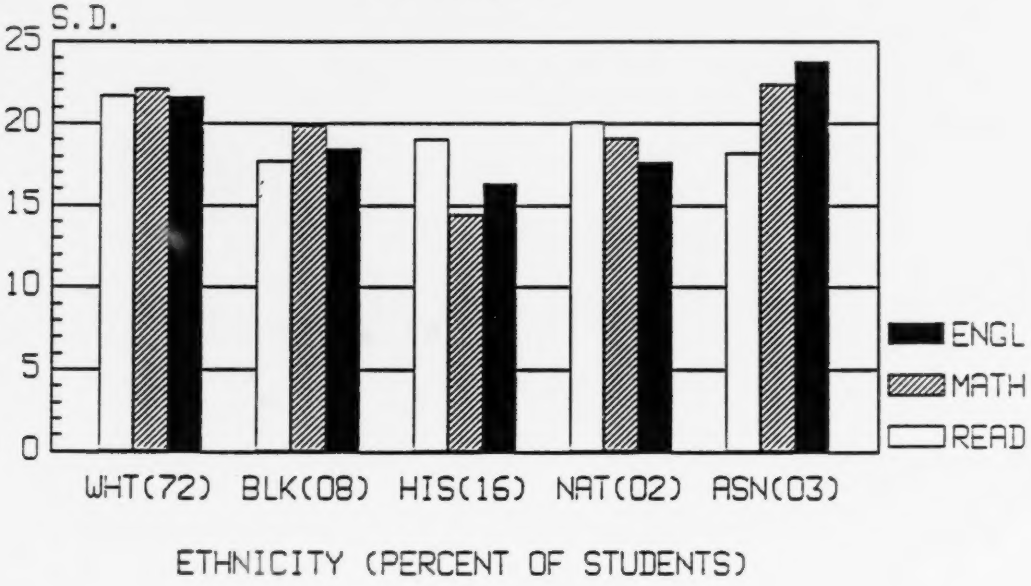


STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR ALHAMBRA HIGH
345 STUDENTS



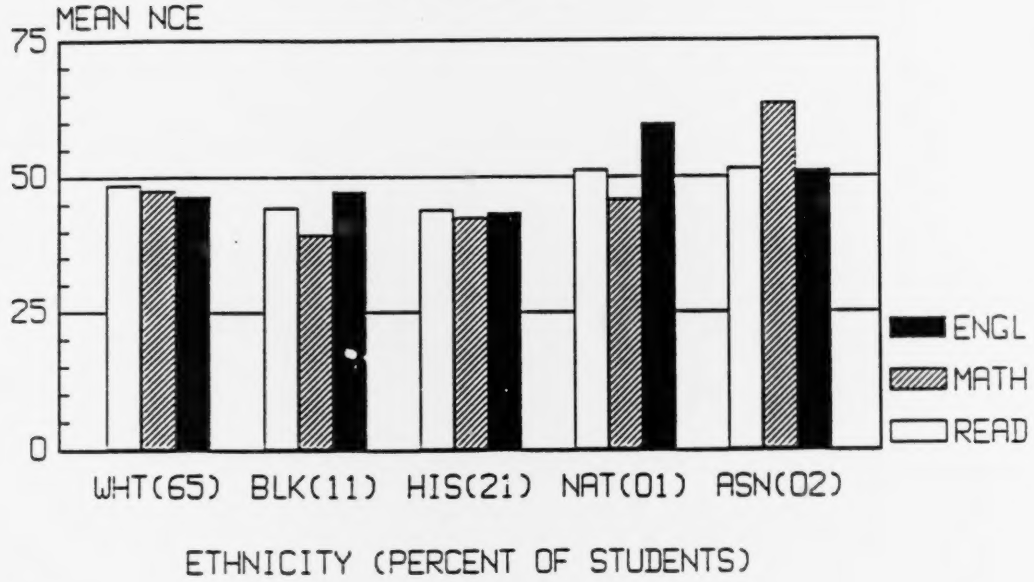


MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR CAMELBACK
352 STUDENTS

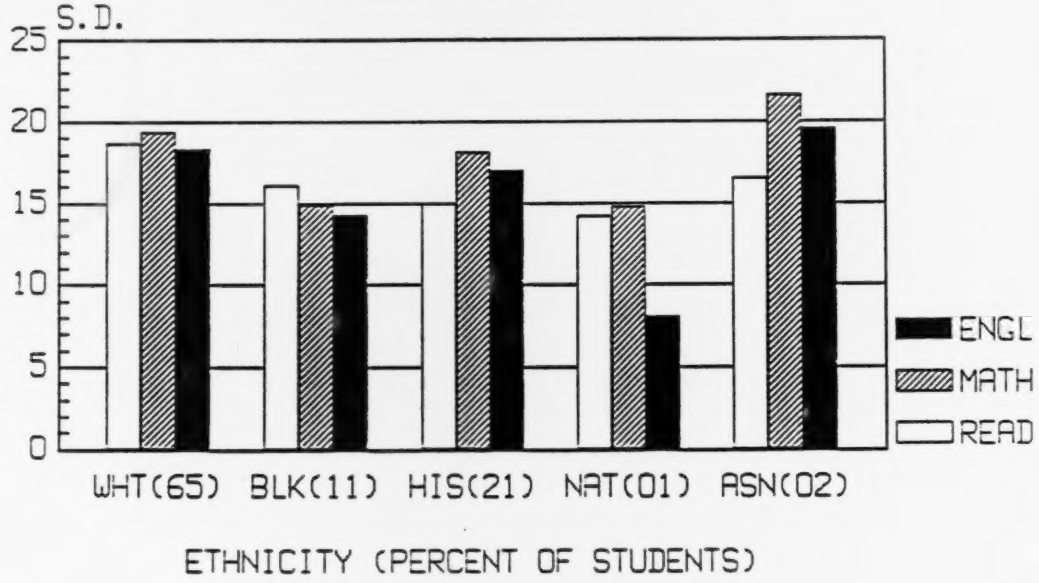


STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR CAMELBACK HIGH
352 STUDENTS

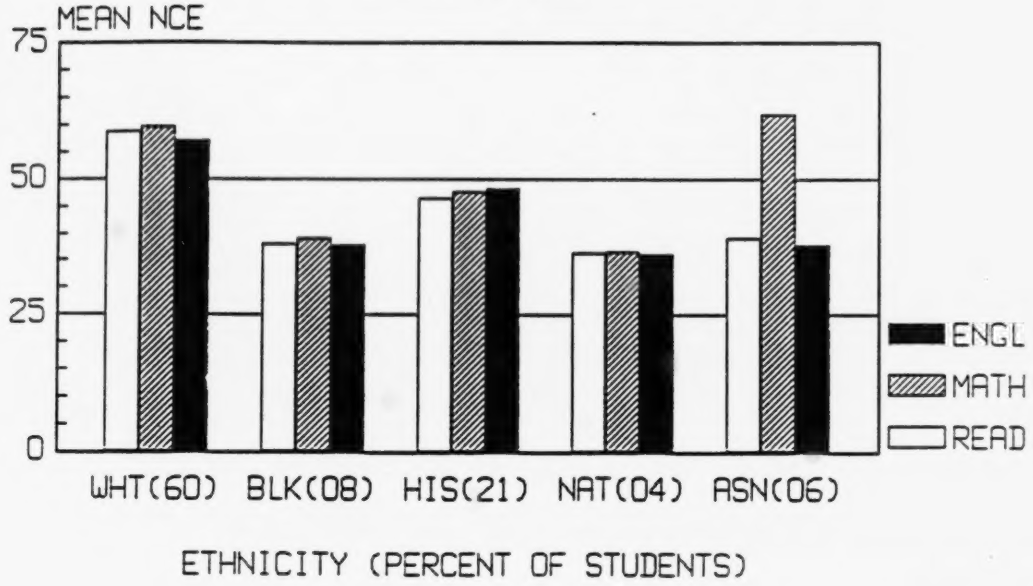
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR TREVOR BROWNE
366 STUDENTS



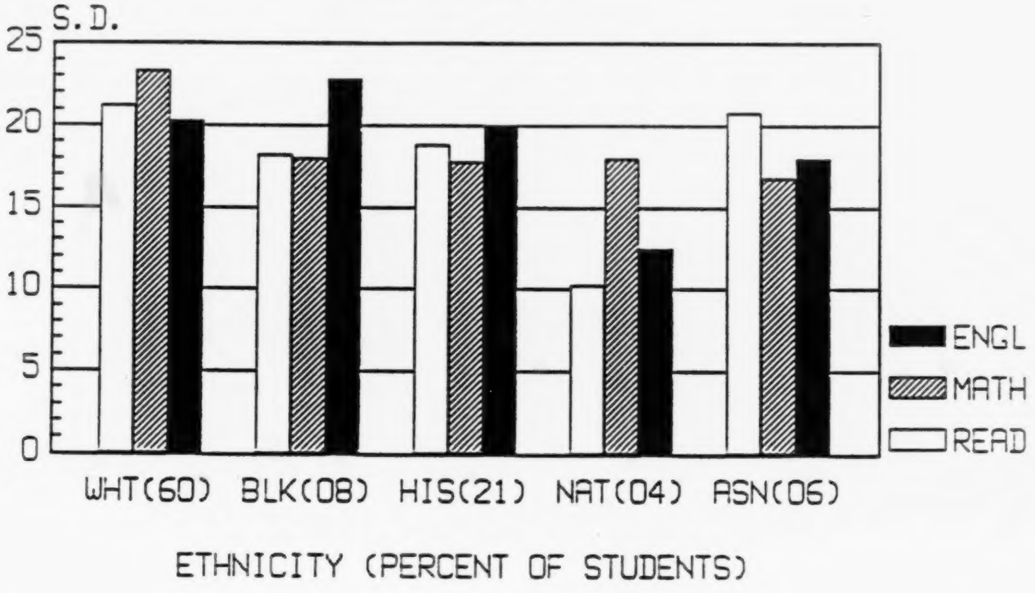
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR TREVOR BROWNE
366 STUDENTS



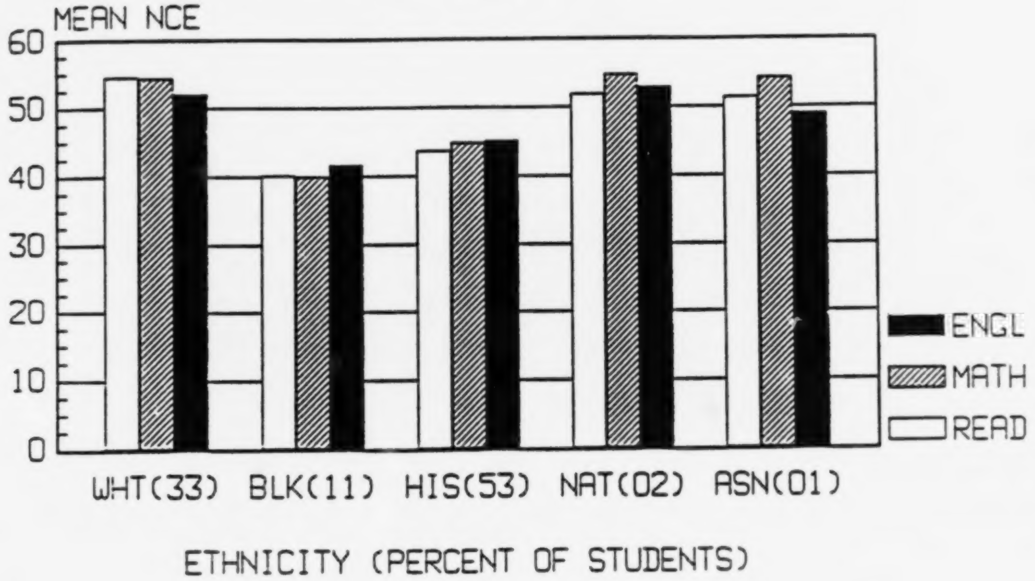
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR CENTRAL HIGH
296 STUDENTS



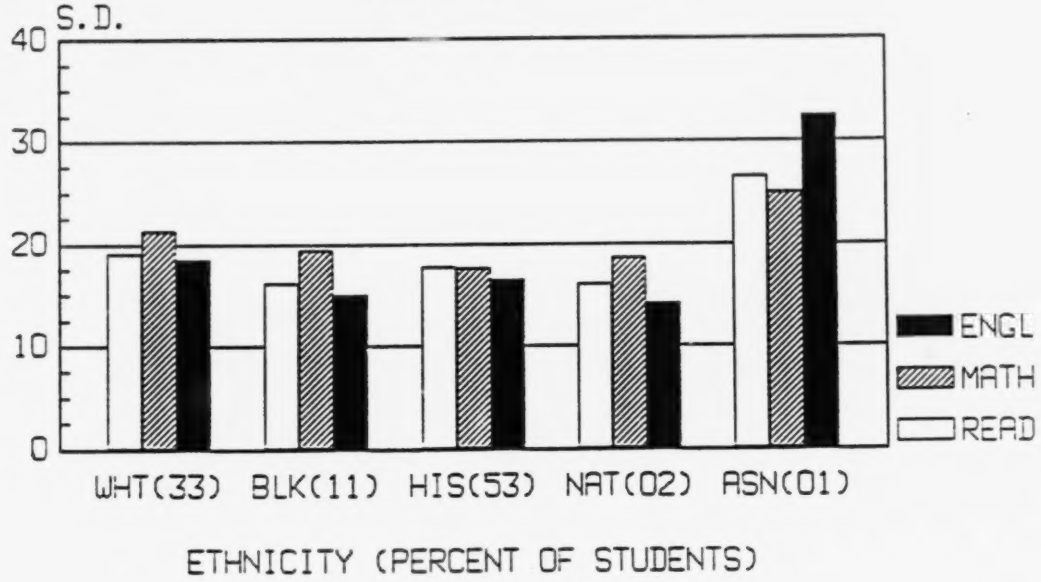
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR CENTRAL HIGH
296 STUDENTS



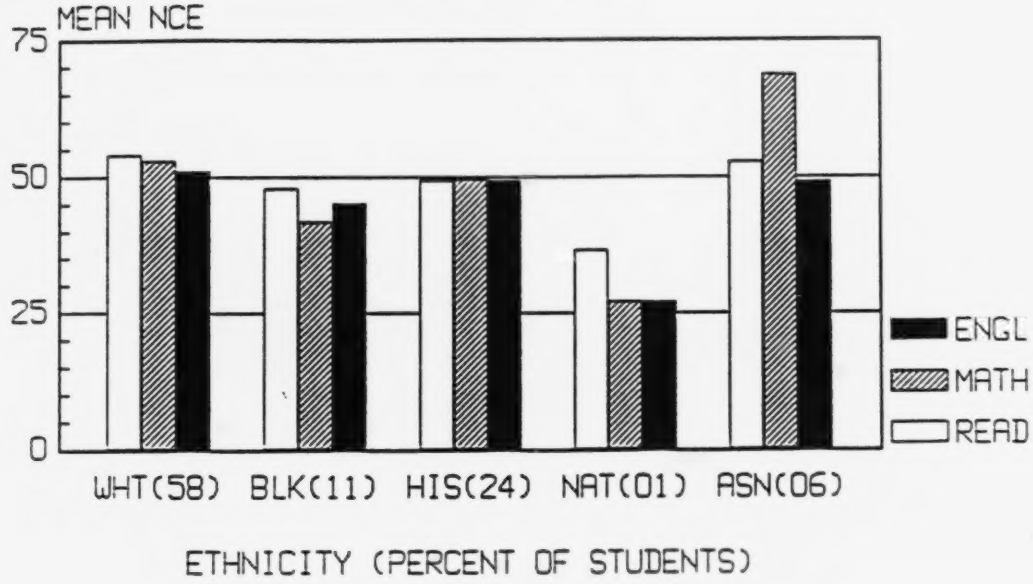
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR CARL HAYDEN
332 STUDENTS



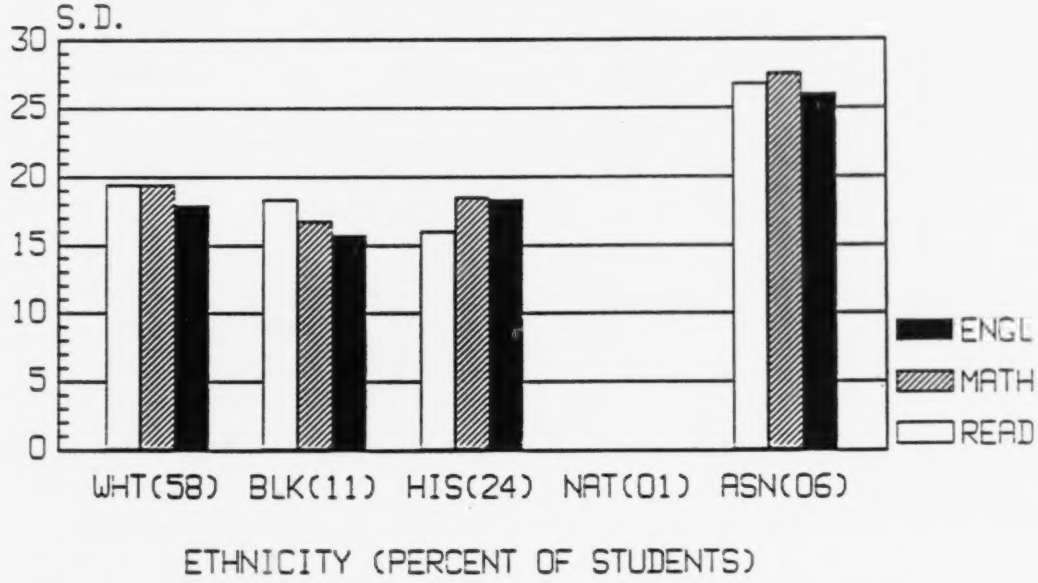
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR CARL HAYDEN
332 STUDENTS



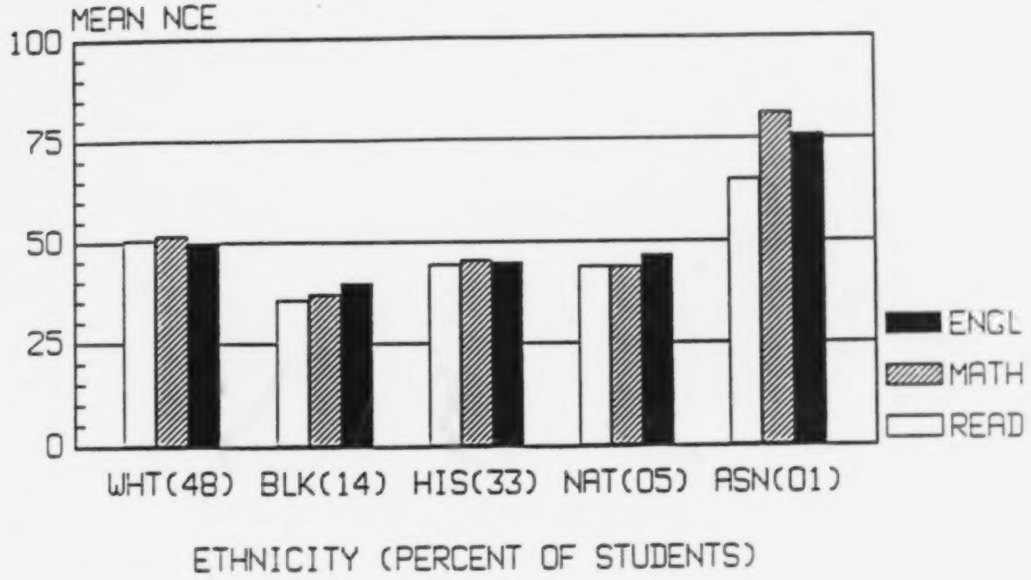
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR MARYVALE
223 STUDENTS



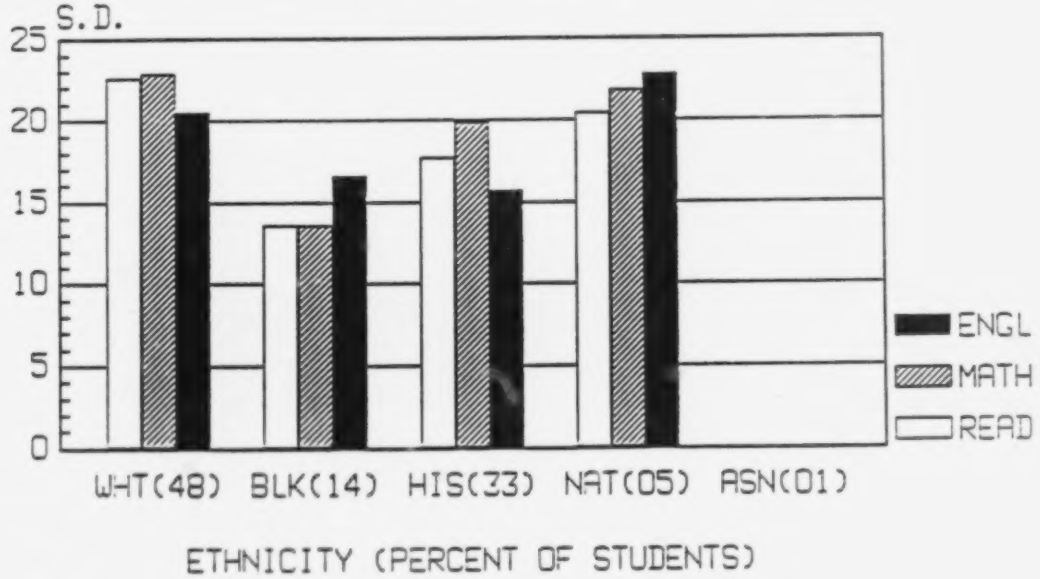
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR MARYVALE HIGH
223 STUDENTS



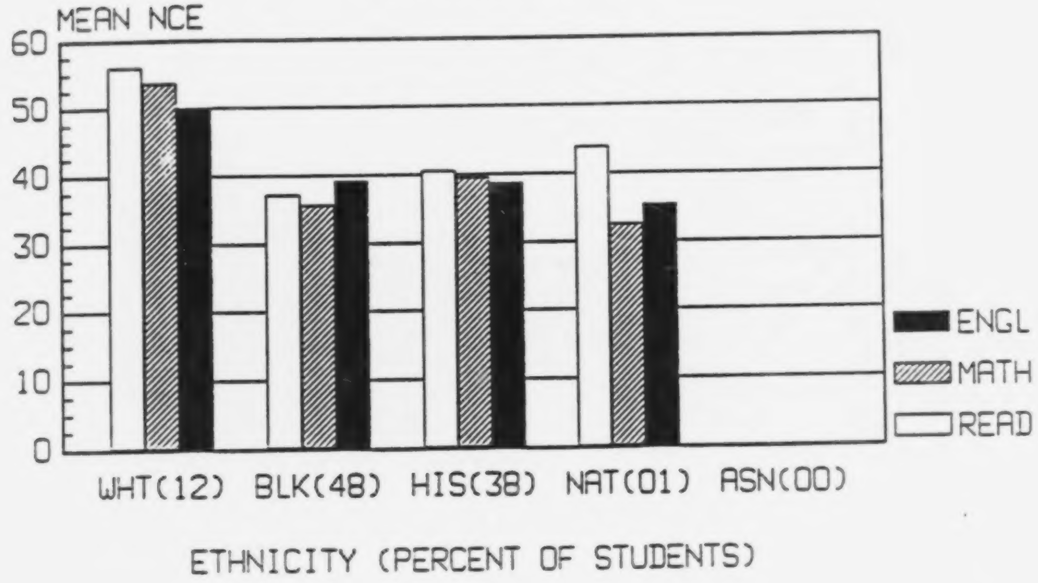
MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR NORTH HIGH
248 STUDENTS



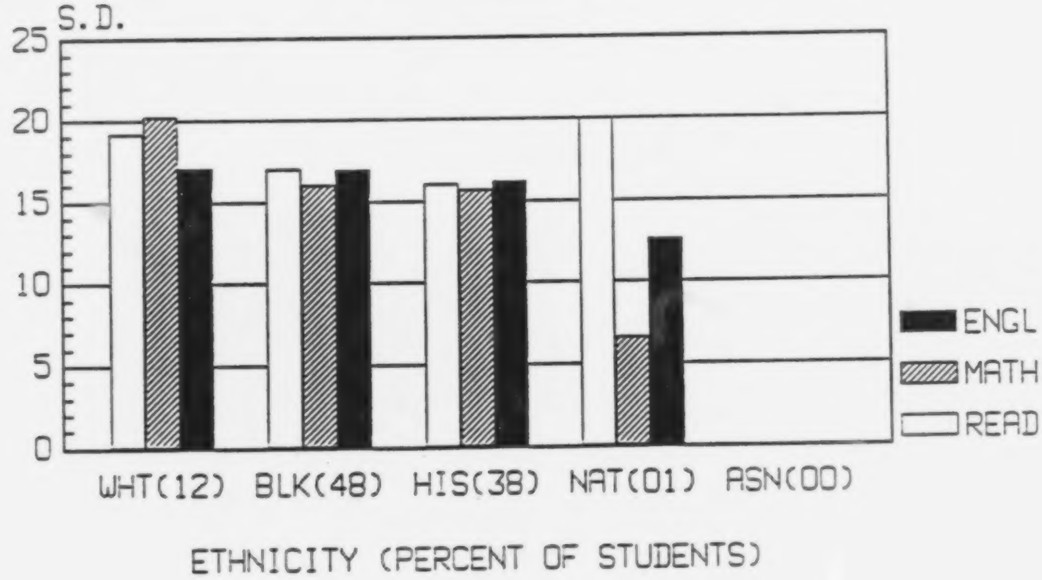
STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR NORTH HIGH
248 STUDENTS



MEAN NCE - 12TH GRADE 1987
BY ETHNICITY FOR SOUTH MOUNTAIN
304 STUDENTS



STANDARD DEVIATION - 12TH GRADE 1987
BY ETHNICITY FOR SOUTH MOUNTAIN
304 STUDENTS



APPENDIX D

MEAN NCE FOR SCHOOLS WITH LARGE ETHNIC ENROLLMENTS

12TH GRADE - 1987

In this set of data, the attempt was made to analyze basic skills performance of the three major ethnic groups in districts having SMALL percentages but LARGE actual numbers of the particular ethnic group. Three sets of data were thus compiled:

1. The scores of Hispanic students (pages D-1, D-2 and D-3) were analyzed and the ethnic groups entered on the "X" axis in ASCENDING order of percentages. The number in parentheses indicates the number of schools in the district with percent of Hispanic students in the particular category.

   Except for the Phoenix Union District, it is immediately evident that the performance on the SAT test decreases in direct relation to the increase in percentage of Hispanic students in the districts. Even though the number of schools may be small, it must be kept in mind that the total number of students in these districts is large and thus the total NCOUNT of Hispanic students is also large.

2. With regard to Native American students, only districts off the reservation were analyzed in this study set, primarily because data were needed in districts having a mixture of ethnic groups, rather that a univariate distribution as would be obtained in districts on the reservations. Thus, districts bordering the reservation were purposely chosen.

3. Only three districts (pages D-5 and D-6) were analyzed with regard to Black students and in every district the performance of the students appears to be related to their concentration in the district. Again, the number in parenthesis following the ethnic percentage on the "X" axis indicates the number of schools in the particular percentage interval.

APPENDIX D - APPENDICES

D-1 Hispanic Mean NCE for Phoenix Union High School District

D-1 Hispanic Mean NCE for Tempe High School District

D-2 Hispanic Mean NCE for Glendale High School District

D-2 Hispanic Mean NCE for Mesa High School District

D-3 Hispanic Mean NCE for Tucson Unified School District

D-4 Native American Mean NCE by Descending Percent in the Casa Grande, Flagstaff, Globe, Winslow and Holbrook Districts

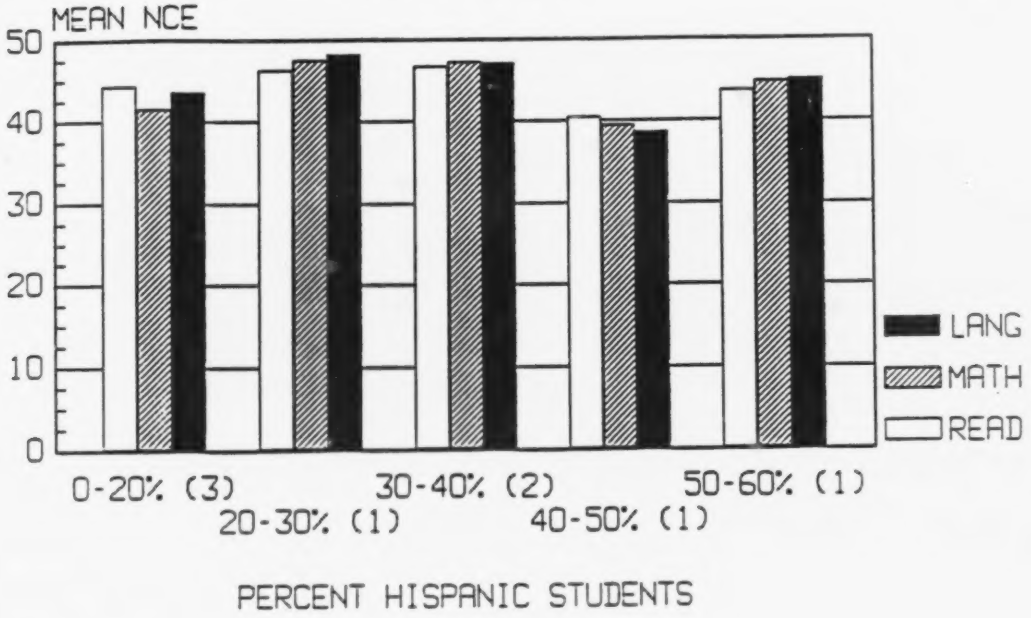
D-4 Native American Mean NCE for 9th Grade 1987 by Descending Percent in the Casa Grande, Flagstaff, Globe, Winslow and Holbrook Districts

D-5 Black Mean NCE for Phoenix Union High School District

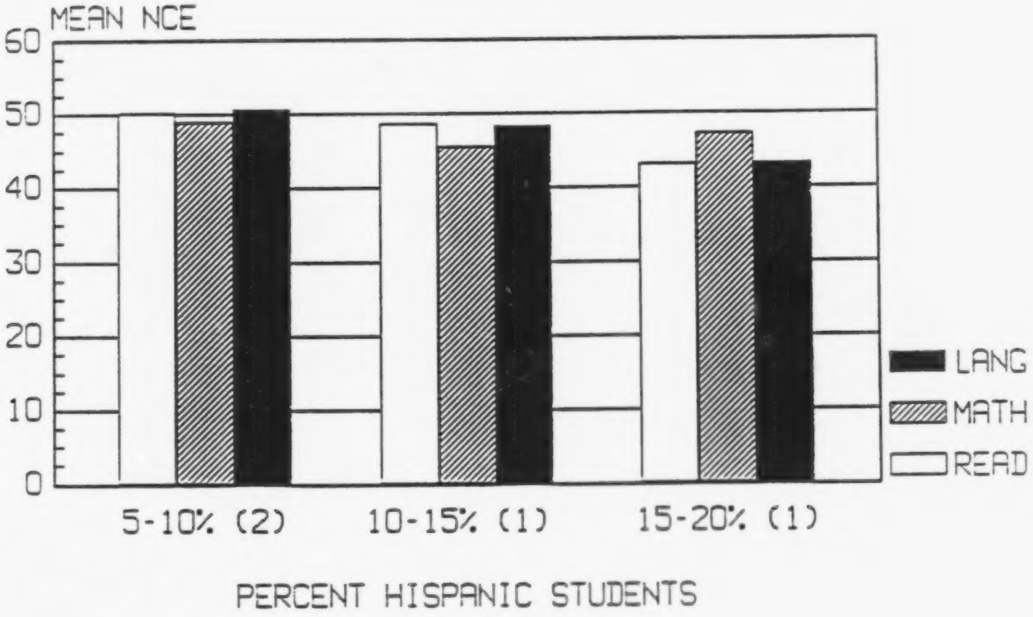
D-5 Black Mean NCE for Tempe High School District

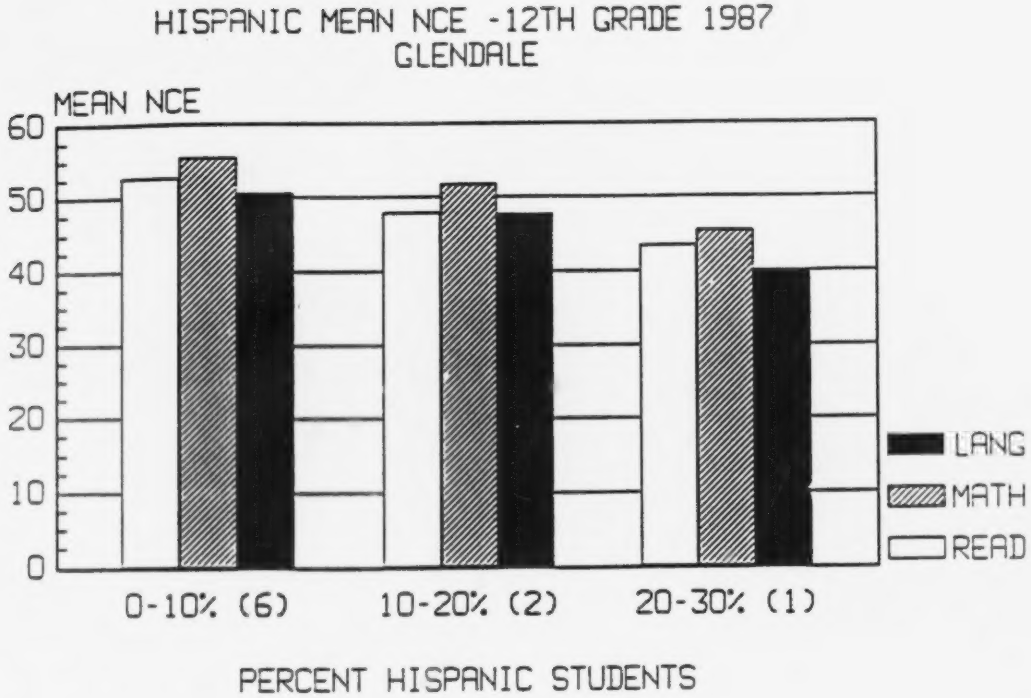
D-6 Black Mean NCE for Tucson Unified School District

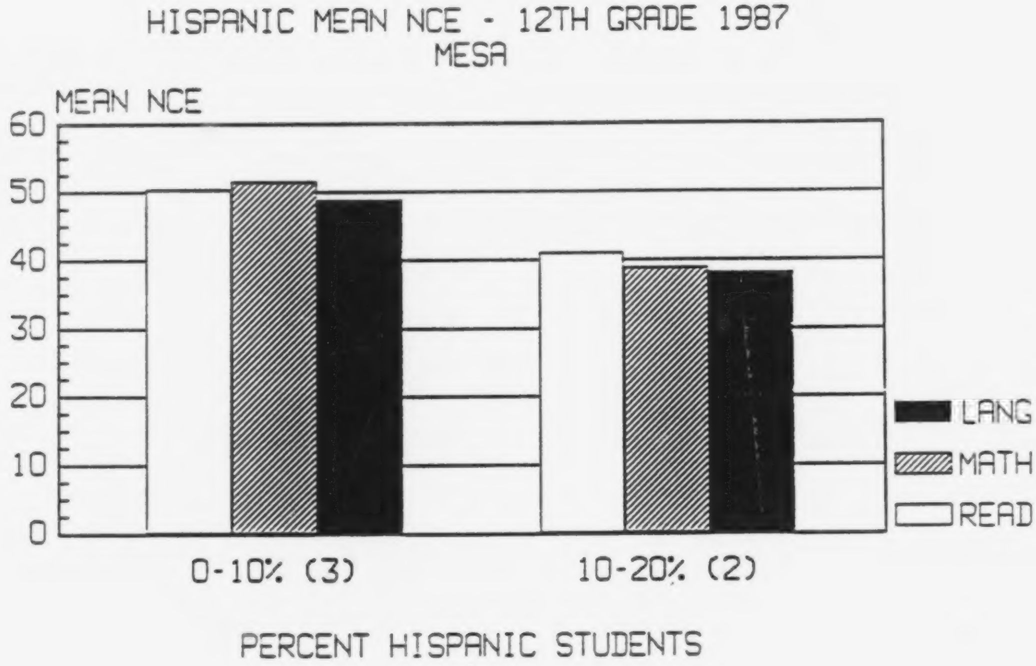
HISPANIC MEAN NCE - 12TH GRADE 1987
PHOENIX UNION

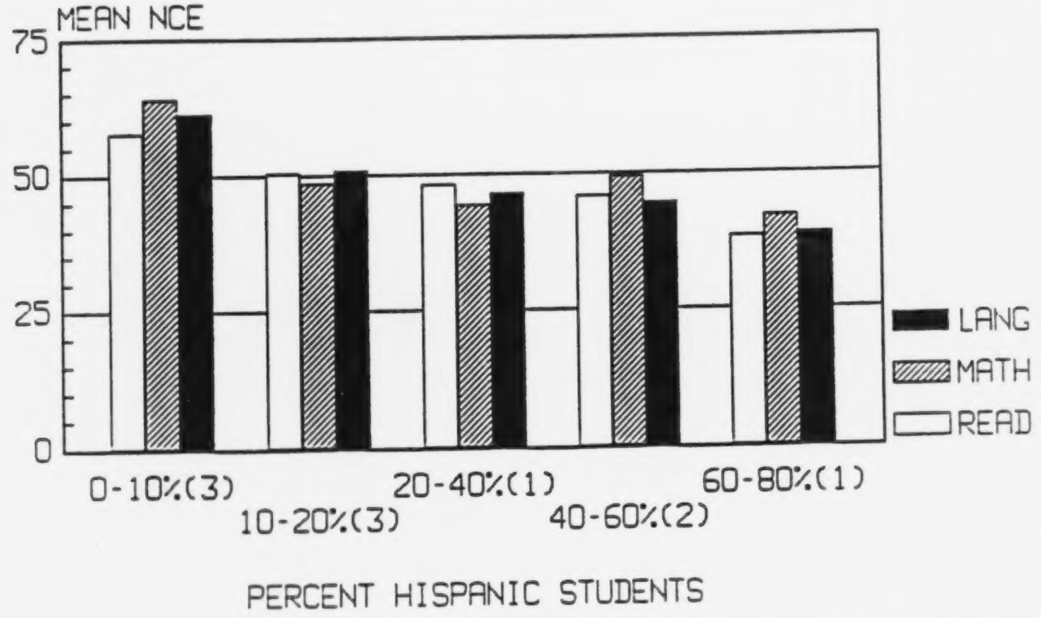


HISPANIC MEAN NCE - 12TH GRADE 1987
TEMPE



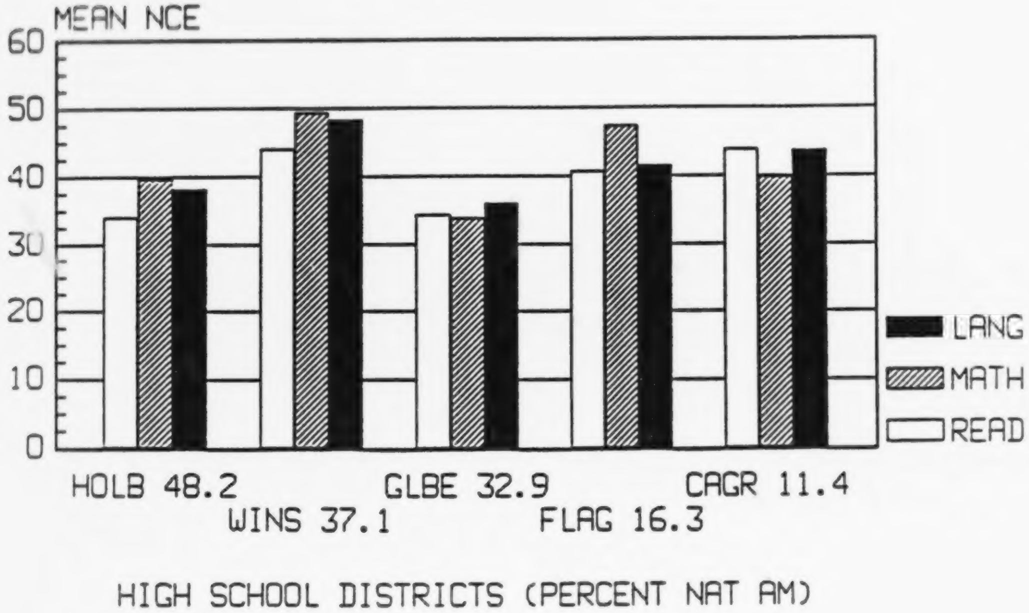

HISPANIC MEAN NCE -12TH GRADE 1987
GLENDALE
MEAN NCE
60
50
40
30
20
10
0
0-10% (6)
10-20% (2)
20-30% (1)
PERCENT HISPANIC STUDENTS
LANG
MATH
READ


HISPANIC MEAN NCE - 12TH GRADE 1987
MESA
MEAN NCE
60
50
40
30
20
10
0
0-10% (3)
10-20% (2)
PERCENT HISPANIC STUDENTS
LANG
MATH
READ

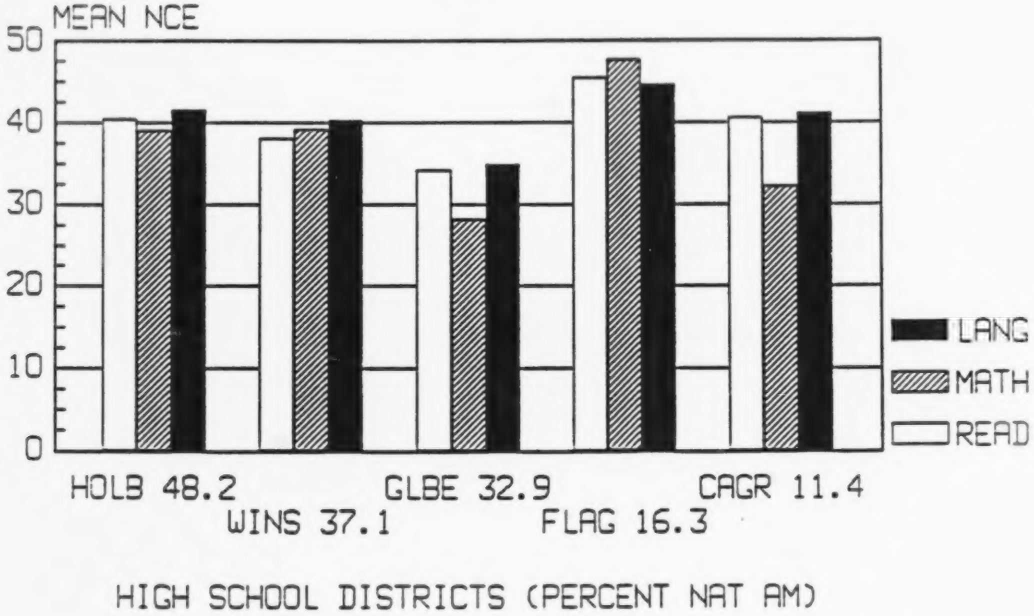


HISPANIC MEAN NCE - 12TH GRADE 1987
TUCSON UNIFIED

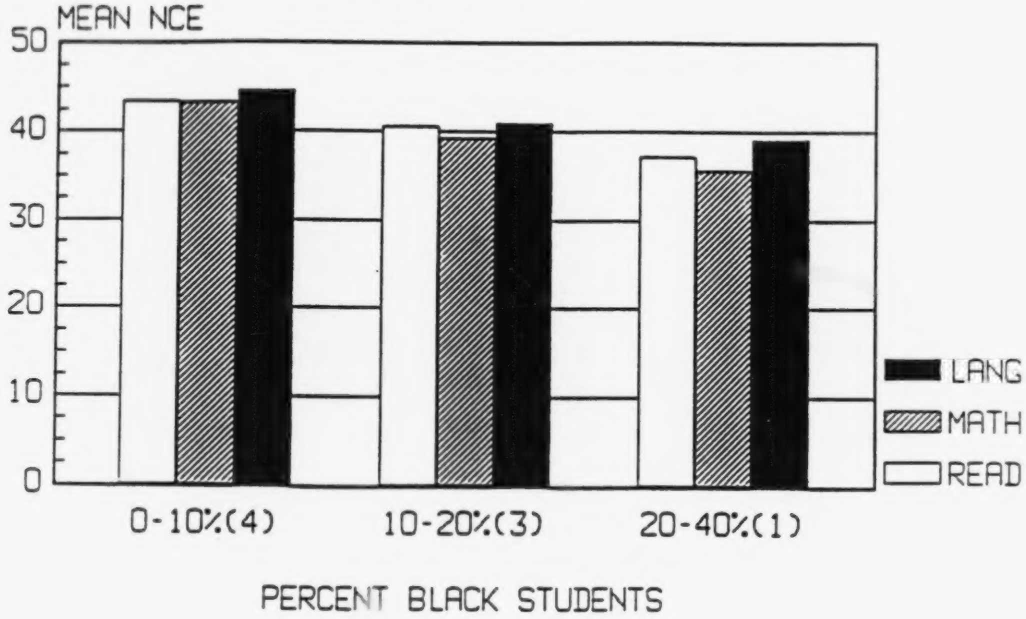
NATIVE AMERICAN MEAN NCE - 12TH GRADE
1987



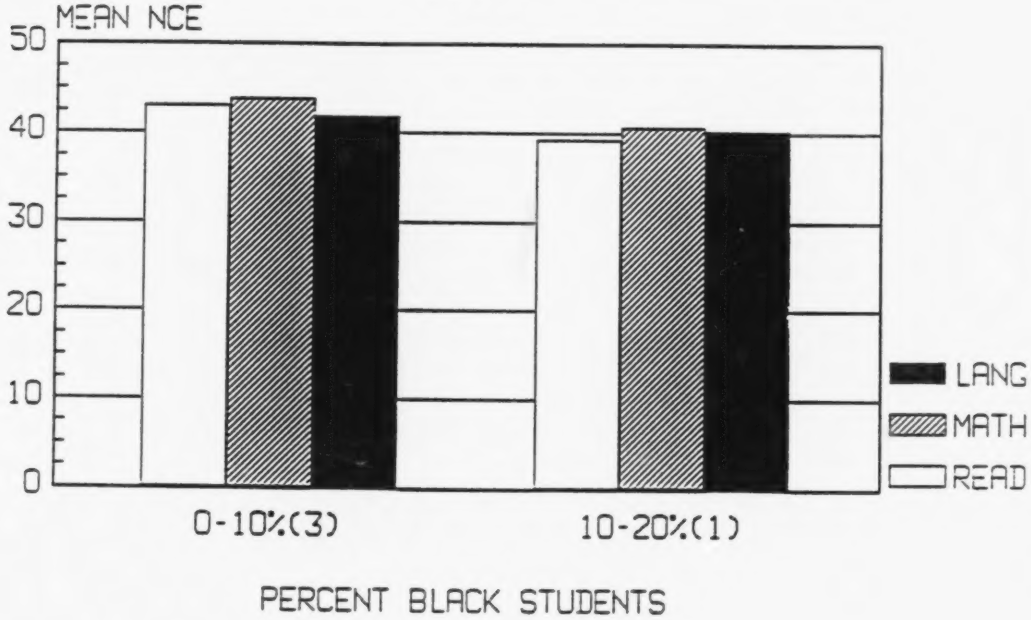
NATIVE AMERICAN MEAN NCE - 9TH GRADE
1987

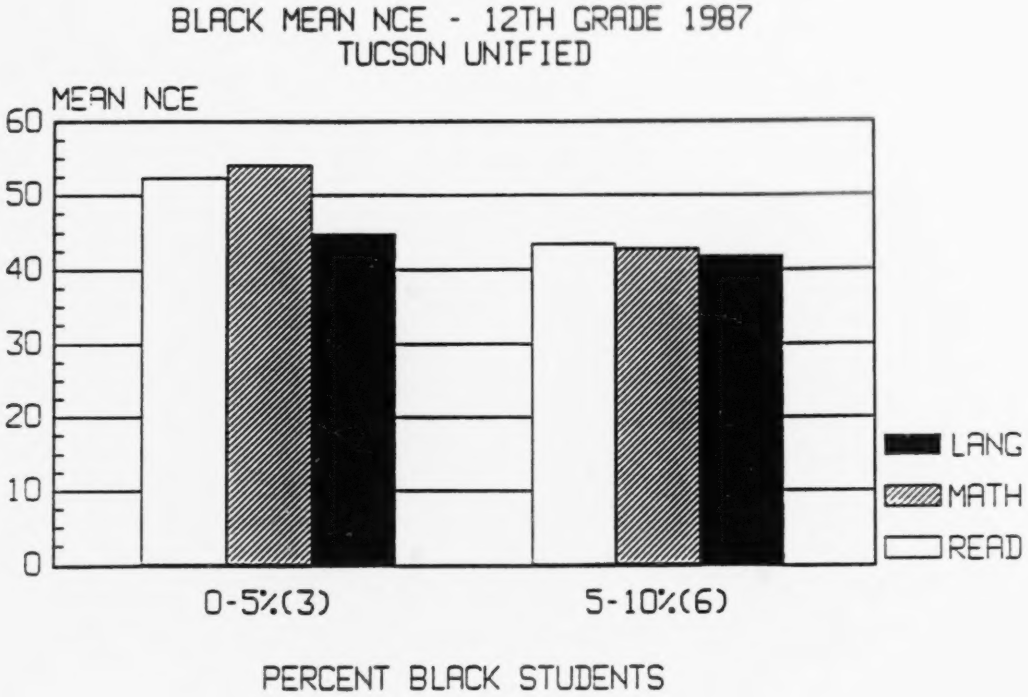


BLACK MEAN NCE - 12TH GRADE 1987
PHOENIX UNION



BLACK MEAN NCE - 12TH GRADE 1987
TEMPE




BLACK MEAN NCE - 12TH GRADE 1987
TUCSON UNIFIED
MEAN NCE
60
50
40
30
20
10
0
0-5%(3)
5-10%(6)
PERCENT BLACK STUDENTS
LANG
MATH
READ

APPENDIX E

MEAN NCE BY PRIMARY HOME LANGUAGE

12TH GRADE - 1987

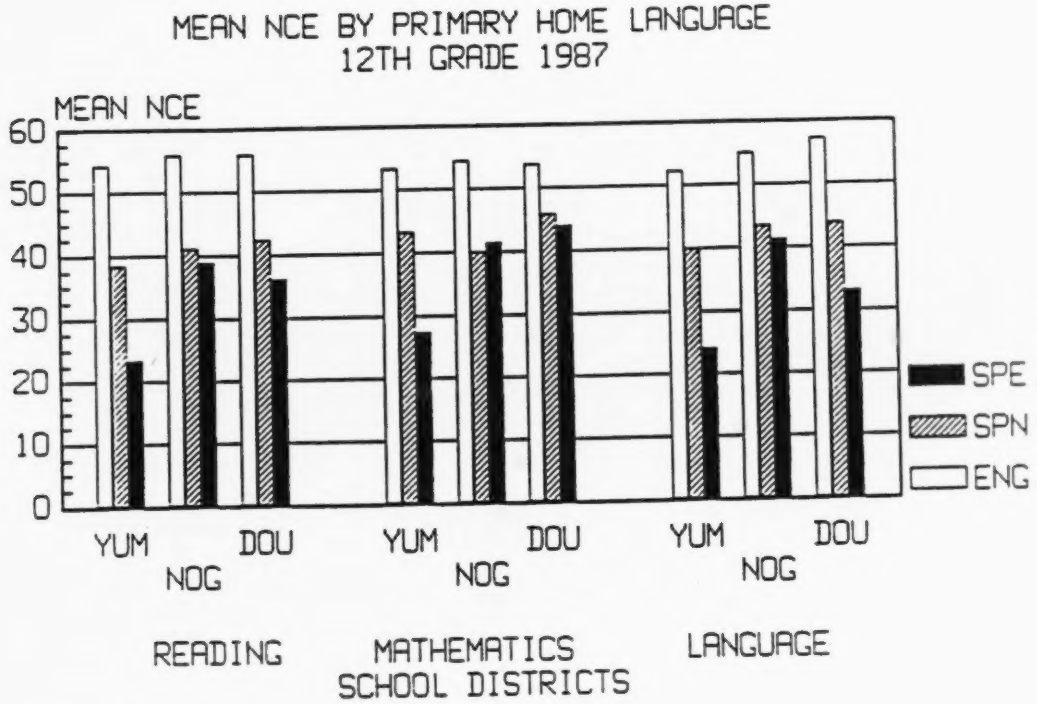
Three school districts were identified in which the primary home language was Spanish or in which Spanish was spoken exclusively. These districts are Yuma, Nogales and Douglas. The graph on page E-1 thus compares the scores in the three basic skills in three student groups in which the primary home language is either English/Spanish or Spanish exclusively. The results are at best inconclusive, although it is evident that in homes where Spanish is spoken exclusively, the performance is lower. This relationship is most evident in the Yuma district.

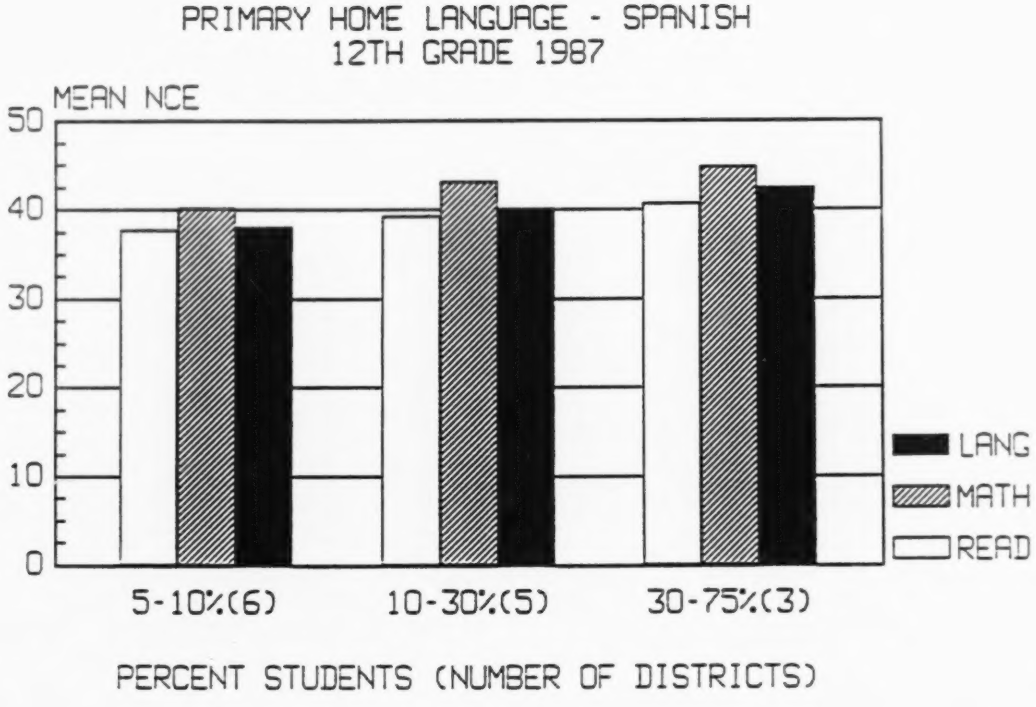
In further analysis of this parameter, a study was made of districts having various levels of percentages of students whose primary home language is Spanish. These students were first grouped in small percentage intervals as shown on the upper graph on page E-2. Because a slight but discernable trend was detected, a second compilation was made using larger intervals in order to "smooth out" minor variations. The resulting compilation is shown on the lower graph and strongly suggests that performance on the SAT test increases with increase in the percentage of students whose primary home language is Spanish.

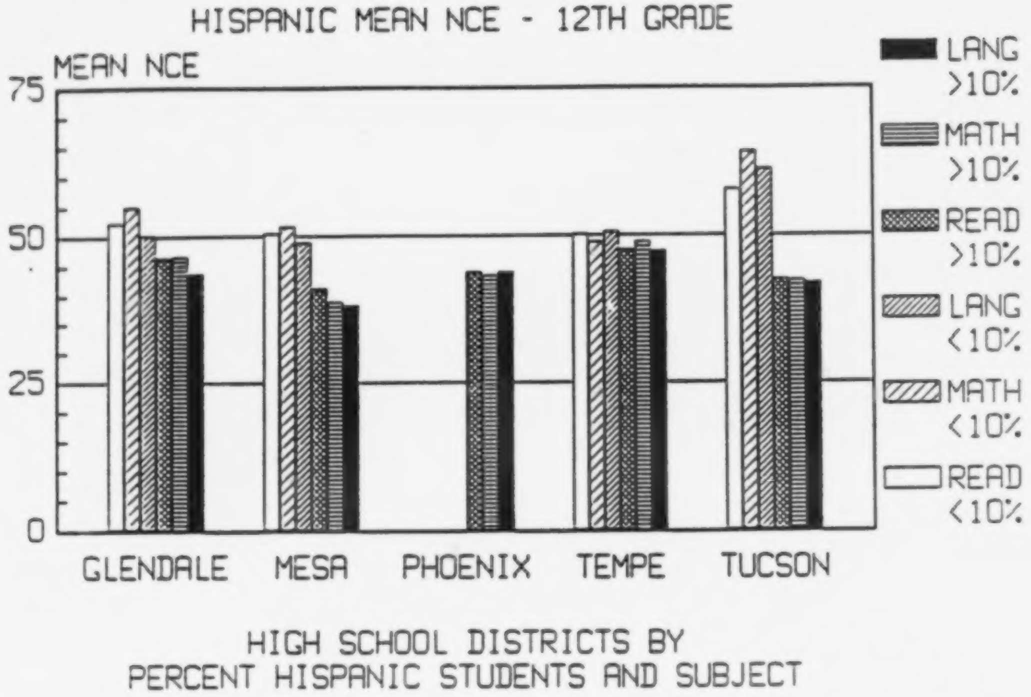
Finally, in the graph on page E-3, the Mean NCE for Hispanic students in the five largest high school districts, previously studied, were compared on the basis of those schools having less than 10 percent Hispanic students with those schools having more than 10% Hispanic students. Again, the distinction is definite, Hispanic students in schools with more than 10 percent Hispanic enrollments have lower SAT scores than their classmates in the schools having less than 10 percent Hispanic students.

APPENDIX E - APPENDICES

E-1	Mean NCE in Reading, Math and language in the Yuma, Nogales and Douglas School District
E-2	Mean NCE - Spanish - Increasing Percent of Students
E-3	Hispanic Mean NCE by Percent Hispanic Students and by Subject


MEAN NCE BY PRIMARY HOME LANGUAGE
12TH GRADE 1987
MEAN NCE
60
50
40
30
20
10
0
YUM
NOG
DOU
YUM
NOG
DOU
YUM
NOG
DOU
READING
MATHEMATICS
LANGUAGE
SCHOOL DISTRICTS
SPE
SPN
ENG


PRIMARY HOME LANGUAGE - SPANISH
12TH GRADE 1987
MEAN NCE
50
40
30
20
10
0
LANG
MATH
READ
5-10%(6)
10-30%(5)
30-75%(3)
PERCENT STUDENTS (NUMBER OF DISTRICTS)


HISPANIC MEAN NCE - 12TH GRADE
MEAN NCE
75
50
25
0
GLENDALE
MESA
PHOENIX
TEMPE
TUCSON
LANG >10%
MATH >10%
READ >10%
LANG <10%
MATH <10%
READ <10%
HIGH SCHOOL DISTRICTS BY
PERCENT HISPANIC STUDENTS AND SUBJECT

MINORITY ACCESS AND PERSISTENCE STUDY: A WORKING BIBLIOGRAPHY WITH ANNOTATIONS

VINETTE COWART, JOHN J. WOOD AND AUGUSTUS S. COTERA

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Vinette Cowart is a graduate research associate at Arizona State University working on a PhD in Higher Education. Prior to coming to ASU in 1986, she was Program Coordinator of minority programs in the College of Engineering at the University of Alabama in Birmingham and Assistant Director of Admissions and Acting Director of Enrollment Management at Oregon Institute of Technology. Since beginning her doctoral work at ASU, she has worked with the College of Education and the Hispanic Mother Daughter Program. She also holds certification as a rehabilitation counselor and as an elementary teacher.

John J. Wood is a professor at Northern Arizona University where he has been teaching anthropology for 22 years. He is a cultural anthropologist with a decade of applied research experience with the Navajo in northern Arizona. He was a member of the Arizona Universities' Study Group on Minority Student Recruitment and Retention, has served as the chair of the Affirmative Action Committee at Northern Arizona University, and has been involved in policy research and evaluation of minority affairs in Arizona universities for the past eight years. His recent publications deal with the impacts of Navajo livestock reduction, and land and religion in Navajo culture.

Augustus S. Cotera is currently serving as Associate to the President, Executive Director of NAYuma. He was Assistant to the President at Northern Arizona University from 1980-1987 and has been a Professor of Geology at Northern Arizona University since 1970. He also served as Professor of Geology at Allegheny College, Meadville, Pennsylvania.

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MINORITY ACCESS AND PERSISTENCE STUDY

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"The Sorry State of Minority Recruiting and Retention." The Chronicle of Higher Education, October 21, 1987, 34(8): p. B3.

PURPOSE

Mr. Agnese, President of Incarnate Word College, writes in response to two articles on minorities/higher education published in The Chronicle in September.

MAJOR POINTS

1. They increased minority enrollments at Incarnate Word College in San Antonio by a marketing campaign which promoted an intimate, caring institution that recognized and nurtured the individual.
2. They also increased the institutional portion of their financial assistance by more than 200%.
3. Overall enrollments increased by 47%; Hispanic enrollment increased to 83%.
4. Their goal is to have the same ethnic mix as San Antonio within the next 4 years.

AMERICAN COUNCIL ON EDUCATION
"Framework for Evaluating Institutional Commitment to Minorities: A Guide to Institutional Self-study". Washington D.C., 1976.

PURPOSE

A self-study guide which promotes reassessment of institutional programs and policies that affect minorities through self-assessment and evaluation.

MAJOR POINTS

Questions are divided into 8 areas:

- undergraduate admissions and recruitment
- financial aid
- counseling, support services, placement
- curriculum
- environment
- graduate and professional programs
- faculty and staff hiring, evaluation, and retention
- administrative policies

AMERICAN COUNCIL ON EDUCATION.
Minorities in Higher Education, 4th. Annual Status Report. Washington, D.C., 1985.

PURPOSE

This report is an up-date of data and information on minority participation at all levels of higher education in the United States.

MAJOR POINTS (Quoted from the Executive Summary on page 4)

1. All minority groups, except Asians/Pacific Americans, continue to be underrepresented in enrollment in 4 year institutions.
2. For all groups but Asians, women outnumber men in total enrollment in higher education.

3. Blacks are considerably less segregated in higher education than they were a decade ago, but Hispanics continue to be heavily concentrated in relatively few institutions.

4. Black enrollment in first-professional degree programs increased significantly while that in graduate education declined.

5. There were significant increases in first-professional degree attainment for all minority groups but all groups, except Asians/Pacific Americans, remain underrepresented in that category.

6. Low high school graduation rates continue to contribute to low higher education enrollment rates for minority groups.

7. The trend toward higher admissions requirements, combined with increasing reluctance to provide developmental/ remedial education, is likely to reduce minority enrollments further.

8. Grant utilization by minority students decreased with no comparable increase in loan utilization. White students increased their utilization of both types of financial aid.

9. Significant numbers of black teachers, particularly in southern states, are leaving the classroom.

10. Increased use of state teacher certification tests is a trend with potential for further reducing the number of minority teachers.

AMERICAN COUNCIL ON EDUCATION
Minorities in Higher Education, 5th. Annual Status ReportWashington, D.C. 1986.

PURPOSE

This report highlights key issues in comparison to the 1985 report. Blacks are losing ground at most levels in higher education. Hispanics remain underrepresented and concentrated at two-year institutions. The problems of increasing access and retention of minority students remain unsolved and unaddressed in most states.

MAJOR POINTS (Quoted from the Executive Summary)

1. While minorities are growing in numbers and in proportion of the population, they still have failed to reach proportional enrollment in higher education. Minorities make up 21.3 percent of the population but only 17 percent of enrollments. They continue to be most under-represented at four-year institutions.

2. Asians continue to be the only minority group that is over-represented in enrollments and degrees earned at all levels of higher education.

3. Black undergraduate and graduate enrollments declined significantly between 1980 and 1984, while Hispanic and Asian enrollments increased at both undergraduate and graduate levels.

4. Although equal representation has not been achieved, enrollments in professional schools continued to increase for all minority groups.

5. Blacks received fewer bachelor's and master's degrees in 1984 than in

1978. Other minority groups made gains at both levels.

6. At the doctoral level, between 1975 and 1984, blacks and Asians increased their proportional representation slightly; Hispanics and American Indians made larger gains but are still seriously under-represented.

7. In the 26 states that responded to a request for information, the most frequently cited methods used to recruit minorities were:

a) High school and junior high outreach programs;

b) Talent Search or Upward Bound programs;

c) Special training and coordination with counselors in high schools and at two-year institutions.

8. Retention efforts were focused on improving basic academic proficiencies and special academic counseling.

9. Blacks showed a decline in the number of faculty positions held between 1977 and 1983, while other minorities increased their representation.

10. Those states affected by the ruling in the on-going desegregation case, Adams v. Bennett, are making progress in enrolling more black students at traditionally white institutions, yet the total participation of blacks is decreasing in the majority of these states.

11. Enrollments at traditionally black institutions peaked in 1980 and appear to be fluctuating.

12. Low-income students had more financial difficulty enrolling in college in 1985 than in 1978 due to lowered family income, higher tuition costs, and reductions in federal student aid.

AMERICAN COUNCIL ON EDUCATION Minorities in Higher Education, 6th, Annual Status Report Washington, D.C., 1987.

PURPOSE

Reviews current trends in higher education in regard to minorities. The declines in Black participation and degree attainment have reached alarming proportions. The declining participation of minorities, especially Blacks, in the teaching force is bound to cause further declines in Black college enrollments and graduation rates.

MAJOR POINTS (Quoted from the Executive Summary pp. 1-2)

1. Black and Hispanic higher education participation rates have continued to decline since 1976, even though their high school completion rates have increased significantly.

2. The number of degrees conferred to Blacks declined significantly between 1975-76 and 1984-85. All other minority groups registered gains in degree attainment at every level.

3. In academic year 1985, despite increases in degree attainment at every level, Hispanics and American Indians continued to earn degrees in numbers well below their proportion of the total population.

4. Education is no longer the most frequently chosen degree field for minorities at the bachelor's level. As of 1984-85 it had slipped to third, after business and the social sciences.

5. Bachelor's degrees earned in education by minorities declined 50 percent between 1975-76 and 1984-85, and master's degrees declined 41 percent.

6. Between 1981-82 and 1984-85, degrees conferred by Historically Black Colleges and Universities (HBCUs) increased at the sub-baccalaureate, doctoral, and first professional degree levels, but declined at the bachelor's and master's levels.

7. Between 1981-82 and 1983-84, degrees conferred in education by HBCU's increased at the doctoral level, but declined 27 percent at the bachelor's and 11 percent at the master's levels.

8. While the percentage of minority students in elementary and secondary public schools has increased, the percentage of minority school teachers has decreased.

9. As of 1986, more teachers in the southeast, a region with a high percentage of Black teachers, were required to pass a competency test prior to their initial certification than were new teachers in other regions.

10. Teacher testing is on the rise despite the fact that there has been no agreement on whether such test actually measure teaching competence, and despite the disproportionately high failure rates of minority groups.

11. Most states with high proportions of minority public school enrollments have minority teachers in proportions well below the minority enrollment.

12. States with large minority enrollments in the public schools are hiring minority teachers in numbers below their current--low---participation in the teaching force.

ARIZONA DEPARTMENT OF ECONOMIC SECURITY
Hispanics in Transition. August, 1986.

PURPOSE

An analysis of the economic and demographic characteristics of Arizona's Hispanic population which includes education, labor force and income information necessary to understanding this community. Hispanics in Transition was written to help planners make important decisions about Arizona's future economy.

MAJOR POINTS

1. Arizona ranks fourth in Hispanic concentration and eighth in the total number of Hispanics (444,102 in 1980) of the fifty states.

2. The majority of Arizona's Hispanics are of Mexican ancestry; 18% are foreign born.

3. Hispanic men participate in the labor force in greater percentages than the general population.

4. More than half of all Hispanics, 25 years and over, had not completed high school in 1980.

5. The Hispanic population is considerably younger than the total population because of higher birthrates and shorter life expectancy.

6. Transitional bilingual programs, bilingual-bicultural instruction, and English as a second language programs will have a positive impact in the labor market and in the academic community.

7. Families (two-parent households) are maintained in spite of lower incomes and other adverse economic conditions.

8. Despite obstacles of language, education, employment and income, Hispanics in Arizona proportionately hold more established, recognized and visible positions of leadership than in all but two other states.

ATTINASI, LOUIS CHARLES, JR.
Getting In: Chicanos' Perceptions of University Going with Implications for Freshman-Year Persistence. Unpublished dissertation. Arizona State University, May, 1986.

PURPOSE

This study's focus is the process by which the Mexican American student, through social interaction, constructs his reality of the university and develops a self concept in relation to it. The qualitative study categorizes common perceptions and experiences of Chicano freshmen as reported through interviews.

MAJOR POINTS

1. For Mexican-American freshmen, the effects of background variables such as high school curriculum, parents' education, and parents' occupation on persistence in college are mediated by significant other influences. They increase the students' exposure to modeling and defining experiences relative to college-going.

2. For Mexican-American freshmen, the extent and nature of anticipatory socialization for college-going has an influence not only on the decision to go to college but, once there, on the decision to stay.

3. For Mexican-American freshmen, the extent to which social integration influences persistence is the extent to which it endows the individual with the capacity to cognitively manage the university environment.

4. Persisting at the university is positively related to the development and use of cognitive maps of the physical, social and academic geography.

5. Attinasi suggests several early intervention strategies such as the Hispanic Mother/Daughter Program, campus visits, and the design of curricula for college preparatory classes.

BALLESTEROS, ERNESTO
Do Hispanics Receive an Equal Educational Opportunity? The Relationship of School Outcomes, Family Background, and High School Curriculum. In Michael A. Olivas, ed., Latino College Students. New york: Teachers College Press, Columbia University, 1986, pp. 47-70.

PURPOSE

Discuss research on the differences in school outcomes (aptitude, high school achievement, educational aspirations, and college achievement) for Chicanos and white students. Compares the effects of socioeconomic status, race, ethnicity, and high school curriculum placement on school outcomes. Data from the late 1970's.

MAJOR POINTS

1. "...social-class status and placement in a college-preparatory program seem to explain a significant proportion of the variation in school outcome". p. 62. School outcomes were similar for the two ethnic categories.
2. Persons in college-preparatory programs had higher school outcomes, as did those with higher socioeconomic status.
3. The major criteria for placing students in vocational or college-preparatory curricula are early grades or scores on achievement tests. Given the relationship between socioeconomic status and school outcomes, it is likely that a higher proportion of economically disadvantaged students will end up in non-college preparatory curricula, thus exacerbating the problem of lower school outcomes.

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
Background for Expanding Educational Equity March 1986

PURPOSE

This is a technical supplement to the Report of the Intersegmental Policy Task Force on Assembly Concurrent Resolution 83, Expanding Educational Equity in California's Schools and Colleges. It contains much of the statistical and case-study information used in drafting the task force's recommendations.

MAJOR POINTS

1. **Issues** -- excellent graphs and charts concerning the percent of 14 to 24-year olds not enrolled in high school compared to family income and ethnicity; income related to years of education and ethnicity; numbers graduating from high school, entering college, and graduating; eligibility for admission; and community college enrollments and transfers to the state universities.
2. **Resources** -- outlines programs that focus on aiding selected students. Lists nine specific elements characterizing the most effective schools:

a. They begin postsecondary and career planning in the junior high school years, in order to help students and their parents develop long-range goals regarding education and work and to understand the relation between continued education and skilled careers.

b. They offer intensive and even "intrusive" student counseling and academic advising, in order to coordinate each student's educational experiences by proper course planning, identify students who need special academic assistance, and provide aid in submitting college admission and financial aid applications.

c. They have reassessed the curriculum to determine if it develops the competencies that students need to succeed in postsecondary education and in skilled jobs, and they realize that these competencies are not merely academic or learning skills but involve students' basic self concept and world view.

d. These schools have established outcome goals related to students' academic performance so they can evaluate and monitor not only their students' progress but also the success of their programs in order to make whatever changes are needed in it.

e. These schools have either established a single curriculum for all students that is adequate for university preparation as well as career orientation, or if they continue to offer more than one curriculum, they have increased their enrollment in their college preparatory program.

f. They have improved their instruction through inservice training of faculty and staff, both to ensure that their teachers are able to offer the needed academic preparation required by the curriculum and also to raise teachers' expectations of students' own self-esteem.

g. They have involved parents in the program, in order to help them understand the operations and expectations of the school and how they can help their own children succeed in school and in later life.

h. They offer tutorial assistance to help students succeed in the college preparatory program, even though these students may not have been prepared in earlier grades for the rigors of an academic curriculum.

i. They utilize the expertise of local postsecondary education faculty as well as outreach staff members to help strengthen their programs and aid their students in making the transition from school to college.

Effective Community College occupational and transfer programs have at least five characteristics in common:

a. Their admissions and enrollment process includes skills assessment, educational and career planning, institutional orientation, academic advising, and correct course placement.

b. They have established close relations with their feeder high schools in order to encourage prospective students to complete a college-preparatory curriculum, thereby reducing students' need for remediation, allowing them to start college with courses that fulfill occupational or transfer program requirements, and minimizing the time they need to complete their program.

c. Their tutorial programs involve faculty members, thereby allowing tutorial assistance to be directly related to the expectations of classroom instructors.

d. They maintain articulation agreements with four-year institutions that provide students with clear information about the transfer requirements of those institutions.

e. They maintain formal ties with the special programs of four-year institutions that ensure continuing academic and financial support for transfer students who need such assistance.

Seven elements characterize the most effective programs of public universities:

a. They provide outreach in junior high schools as well as senior high schools.

b. They provide assistance to feeder junior and senior high schools in improving their curriculum and instruction.

c. They offer "summer bridge" programs for low-income and underrepresented students between high school graduation and the freshman year.

d. They offer orientation programs to both freshmen and transfer students.

e. They coordinate academic advising and career planning.

f. Their academic tutoring involves the faculty.

g. They offer student residential and social activities designed to make low-income and minority students feel welcome and wanted.

Six elements characterize the strategies of independent colleges and universities:

a. They provide admissions outreach activities especially designed for minority students.

b. They provide residential housing opportunities, small classes, and an atmosphere that involves students in campus life.

c. They offer orientation and adjustment programs for all new students, creating a positive atmosphere of transition from home to campus.

d. They provide specially tailored financial aid packages for individual students.

e. They operate a safety net of academic assistance programs, ranging from peer counseling to direct contacts with senior faculty members.

f. They coordinate academic advising and career planning with students' interests and ambitions.

3. Other proposal recommendations from the Achievement Council, previous Postsecondary Education Commissions, The Senate, and The Legislature are listed in totality.

4. **Areas for action** -- lists objectives for junior and senior high schools, community colleges, and public four-year colleges and universities.

CHACON, MARIA A., ELIZABETH G. COHEN, and SHARON STROVER
Chicanas and Chicanos: Barriers to Progress in Higher Education. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp.296-324.

PURPOSE

Addresses the question of whether or not Mexican American females encounter barriers related to their sex as well as barriers stemming from their ethnic identity. The research compares Chicana and Chicano experiences, identifies progress barriers, and attempts to understand how these barriers work in higher education. Data came from a sample of Mexican American women and men attending five different institutions.

MAJOR POINTS

1. Conclusions from other research:

a. In comparison with Anglos, other Hispanics, and Mexican American males: "The data that are available on Chicanas show that they are the poorest group and have the lowest levels of attainment". Educational attainment is so low that the data suggest that there is a double barrier.

b. The rate of college completion for Mexican-origin men is really twice as high as for Mexican-origin women.

c. The data on attrition by sex is ambiguous.

d. Chicanos and other minorities are concentrated in two-year colleges. Here many students elect programs that do not lead to an academic degree. But no good evidence that barrier works any differently for other minorities or Anglos.

e. Studies of age and work status show that older and working students in two-year colleges are less likely to persist than the same students in four-year colleges.

f. "...socioeconomic background has an indirect effect on persistence that is mediated by academic performance." p. 300.

2. Their research shows:

a. "...demographic characteristics, work obligations, academic performance, and difference in type of college attended were *independent predictors* of progress" p. 312.

b. "Gender did not have a direct impact on program progress... Gender has an impact *indirectly through its influence on hours of domestic labor*". p. 312.

c. "At the present time, community colleges are not well suited to meeting the need of students from a low socioeconomic background who aspire to a B.A. or B.S. degree" p. 320.

COLLISON, MICHELE N-K.
"Equity in Higher Education Still Eludes Blacks, Urban League Says", *The Chronicle of Higher Education*, January 20, 1988, 34 (19): A31, A34.

PURPOSE

Blacks are not represented in higher education as students, faculty, or administrators in numbers commensurate with their representation in the population.

MAJOR POINTS

1. Statistics show that blacks are the only ones who are consistently losing ground in the quest for educational equality.
2. The decline occurred despite the fact that the number of black 18-to-24 year-olds with high-school degrees increased to 2.8 million in 1985 from 2.7 million in 1980.
3. Increasing reliance by institutions on loans, the rising cost of a college education, and the erosion in the real incomes of black families in the 1970's were cited as contributing to the decline in the number of black students attending college.
4. Institutions need to commit resources on a long-term and sustained basis to reverse this decline.
5. Black students often leave for financial reasons, and because of isolation, insensitive professors, and racist

students.

6. Too many black students are concentrated in community colleges, where more than 40% of all black college students are enrolled.

7. The armed services, which are now 19% black, are competing with colleges for black students.

8. The declining number of blacks going to college would also result in fewer blacks being eligible to become military officers.

9. The United States must increase the supply of minority teachers and prepare all teachers to educate the increasing numbers of minority students.

DURAN, RICHARD P.
Prediction of Hispanics' College Achievement. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 221-245.

PURPOSE

Examines research on predicting Hispanics' undergraduate college achievement. Assesses the use of high school grades and admission test scores to predict early college grades, and discusses improving prediction of Hispanics' college success.

MAJOR POINTS

1. ...Hispanics' high school grades and areas of study may not be as valid a measure of college preparation as are those of white non-Hispanics. The primary reasons are "heterogeneity" in background and in high school experiences. p. 229.

2. ...some Hispanics' admissions test behavior may be influenced by familiarity with academic English, personality factors, and speededness", although the extent and intensity of these influences are not well-documented or understood. p. 232.

3. It is difficult to research the impact of other admissions criteria, such as letters of recommendation, and personal interviews, but the author thinks that admissions staff who are unfamiliar with the cultural backgrounds of Hispanics might not be sensitive in interpreting their potential for college success. p. 234.

4. Recommends developing an admissions manual to help in systematically reviewing the background of Hispanic candidates whose potential may be underestimated by grades and entrance exams. p. 240.

a. Factors that could moderate the interpretation of a candidate's high school achievement and test scores:

1) "...language background and English language proficiency."

2) "...exposure to schooling in Spanish and academic achievement in Spanish contests."

3) High educational aspirations and high achievement motivation that are coupled with lower high school grades and admissions test scores than expected."

4) Higher than expected high school grades or admissions test scores given parents' educational background and income."

5) "The Presence of financial and other obligations to family during high school coupled with higher than expected high school grades and admissions test scores."

b. Other factors that may reflect Hispanic academic aptitude:

1) "Significant school and home or community activities involving use of academic and subject-matter skills related to schooling."

2) "Frequency of voluntary participation in counseling programs and other programs exposing students to significant academic environments (e.g., visits to libraries.)

3) "Development of significant literacy skills in Spanish and functional utilization of these skills at advanced levels".

5. We need a more comprehensive picture of college achievement than early college grades for predicting college success.

DURAN, RICHARD P.
Hispanics' Education and Background: Predictors of College Achievement. College Entrance Examination Board, New York: 1983.

PURPOSE

The purpose of this report is to review issues and previous research surrounding prediction of U. S. Hispanic students' college achievement. It concentrates primarily on summarizing and interpreting selected empirical studies of Hispanics' educational attainment, preparation for college, college aptitude assessment, and prediction of achievement in college. The primary subpopulations discussed are Mexican, Puerto Rican, and Cuban.

MAJOR POINTS

1. Among persons 18 to 34 years of age who are still in high school (Hispanics tend to graduate at a later age), more Hispanics than non-Hispanics do not graduate from high school and do not go on to college.

2. Hispanics are less likely than majority group members to successfully complete college, receive degrees, and pursue advanced college training.

3. Hispanics tend to attend two-year institutions rather than four-year institutions.

4. Lack of educational attainment among Hispanics is associated with income level of students' families, well-being of families and familial obligations, and language background of students.

5. The most important educational impact of cultural stereotypes is that they may be believed by teachers whether they are true or not.

6. Language background of Hispanics showed a moderate-to-strong relationship to Hispanics' high school achievement, but the influence of language background on schooling may be mediated by other factors.

7. Hispanic high school students are deriving less academic preparation for college than white non-minority students.

8. Hispanics' propensity to adopt strong values in the strength and well-being of the family and community may have an unintended negative impact

on academic achievement.

9. Evidence suggests that adequate high school resources, a hospitable high school social climate and sensitivity of high school staff to Hispanics' background characteristics may be critical to optimizing Hispanic students' school achievement and preparation for college.

10. Under the assumption that admissions test scores of Hispanics are valid indicators of students' college aptitude, the inescapable conclusion is that Hispanic college candidates are not as academically prepared for college work as white non-Hispanic students.

11. High school grades and admissions test scores are not as good predictors of U.S. Hispanics' college grades as they were of white non-Hispanic college grades.

12. The review of survey research on Hispanics' educational achievement and attainment verified that language background may affect Hispanics' academic performance in English and test performance.

EVANGELAUF, JEAN.
"Official Suggests Tailored Strategies for Families' Saving" The Chronicle of Higher Education, January 20, 1988, 34 (19): A32.

PURPOSE

Kathleen Brouder, information director for the College Scholarship Service, advises parents on saving for their children's college education.

MAJOR POINTS

1. Low-income parents should save whatever they can ($2 or $5 a month), but do it regularly. Financial aid will be available to do the rest. Curricular choices as early as the seventh grade can determine those that go on to college.

2. Middle-income parents may not have to pay the whole college expense, but need to save now to help out their budget during the college years.

3. Upper-income parents should start saving early and take advantage of interest rates.

EVANGELAUF, JEAN.
"Experts Extol Anew the Advantages of Saving for College" The Chronicle of Higher Education, January 20, 1988, 34 (19): 1, A32-33.

PURPOSE

This article discusses concerns over the past reliance on financial aid loans and the debts they have created. It summarizes some current approaches to college fund savings programs.

MAJOR POINTS

1. No current national figures are available that show how much parents actually save for college.

2. Illinois has developed College Savings Bonds which are zero-coupon bonds exempt from federal and state taxes and which provide a cash bonus if they are redeemed for college expenses.

3. Wyoming has a prepaid tuition program which guarantees four years

of tuition at the University of Wyoming.

4. The Reagan Administration is expected to propose a new savings bond whose interest would be tax free if the bond is cashed for college expenses.

5. Efforts are underway to change the financial aid funding formula so as not to penalize families who have saved for college.

a. Some colleges are thinking about awarding larger grants and smaller loans to students whose families have managed to save.

b. Illinois will not count up to $25,000 of a family's assets if the money is held in the state's new College Savings Bonds.

EVANGELAUF, JEAN.
"2-Year College in New Mexico Offers 'Dream' Plan" The Chronicle of Higher Education, January 20, 1988, 34 (19): A33.

PURPOSE

San Juan College offers a "Possible Dream Scholarship" to provide incentive to save for, and prepare academically for higher education.

MAJOR POINTS

1. The plan combines a monthly savings requirement of $10.00 for 54 months, a $125 scholarship, academic counseling and a guarantee that tuition will not rise for participating students.

2. San Juan County's eighth grade students receive a personally inscribed "Possible Dream Certificate" and a letter describing the benefits of a college education.

3. The payments, their accrued earnings, and the grant provided by the college will cover two years of tuition.

4. If parents wish to leave the program, their money will be returned, minus interest and a $25 fee.

5. Most of the participants have Hispanic or American Indian backgrounds.

FIELDS, CHERYL M.
"Closing the Education Gap for Hispanics: State Aims to Forestall a Divided Society ".The Chronicle of Higher Education, September 16, 1987, 34(8): pp. 1, A36-38.

PURPOSE

California looks at the question "How do you provide educational opportunity for the majority of students in the state?" The fact of a growing minority population that is not getting the benefit of the existing educational system is discussed in terms of the projected workforce of the 1990's. National and state statistics are given for Hispanics in regard to population, high school graduation, and college attendance.

MAJOR POINTS

1. UCLA is working on intervention programs in the elementary schools. It is believed that "college begins in kindergarten".

2. Several Hispanic college students were interviewed for first hand information on their reasons for college attendance. Interventions by college counselors while in high school

placing them in college prep courses, UCLA's Freshman Summer Program, East LA College's Puente Project, mentors, and role models were mentioned as positive influences. The Puente Project teams each student with an English teacher, a counselor, and a successful Mexican American who serves as a mentor.

FIELDS, CHERYL M.
"Colleges in California Seek New Ways to Expand Pool of Hispanic Students Prepared for Higher Education". The Chronicle of Higher Education, September 30, 1987, 34(5): pp. A31-34.

PURPOSE

This article describes some of the current intervention strategies being tried in California.

MAJOR POINTS

1. UCLA's Center for Academic Interinstitutional Programs is trying to increase the pool of students prepared for college by working closely with teachers and instructors from elementary schools to community colleges.

2. The University of California and the California State University systems have several program working with students as early as eighth grade: sending letters in English and Spanish to students and parents about college; a video distributed to television stations and junior and senior high schools; Hispanic college students making presentations in Spanish in the communities; tutoring by college students for junior high students.

3. The Legislature has directed community colleges and neighboring four-year institutions to cooperate in setting up "transfer centers" aimed at increasing the relatively small number of minority students who transfer from community colleges to four-year institutions each year. Some four-year institutions are reassessing and reorganizing their traditional programs, which provide tutoring and other services for minority students once they have been recruited.

4. CSU at Northridge's minority engineering program is highlighted. Major features of its successful retention of minority students by building a sense of community are:

a) Requiring them to take an orientation course that teaches study skills, including how to study together productively in groups of two or three.

b) Clustering them in the same sections of courses that they all must take, such as calculus.

c) Operating a study center with tutors available, that also serves as a home base for students between classes.

d) Encouraging them to participate in student affiliates of professional organizations.

5. Also in this edition of The Chronicle is an article on minorities raising their SAT and ACT scores.

FRIES, JUDITH E.
The American Indian in Higher Education, 1975-76 to 1984-85. U. S. Department of Education, Center for Education Statistics, March 1987.

PURPOSE

This report explores several areas of the participation of American Indians in higher education. Data are presented on various topics such as: population characteristics, enrollment, degrees, staff, and institutions for the years 1975-76 to 1984-85. Data presented on each topic vary according to years for which the data were available, and cover all accredited colleges and universities in the United States.

MAJOR POINTS

1. During the decade of the 1970's, the number of "college-age" American Indians (aged 18 to 24) more than doubled. By 1980, 60% of American Indians in this age roup had graduated from high school, up from 51% in 1970.
2. Only 8% of the American Indian population (25 years old and over) were college graduates in 1980, compared with 17% of whites.
3. Total American Indian enrollment in institutions of higher education increased by more than 15% from 1976 to 1982.
4. More American Indian females than males were enrolled at the undergraduate and graduate levels in 1984; however, American Indian males outnumber females at the first-professional level.
5. The number of bachelor's and higher degrees awarded to American Indians increased a little over 8% from 1976 to 1981. Between 1976-79, American Indian bachelor's degree recipients most often chose the field of education as their field of study; however, in 1981, the field of business and management was chosen most often at the master's and first-professional degree levels, the most popular fields of study were education and law, respectively.
6. The majority (60%) of American Indians employed full-time in the Nation's institutions of higher education worked in support occupations. Only 6% of American Indian full-time employees in colleges and universities were employed as executives, administrators, or managers, and 19% were faculty.
7. About half of American Indian male faculty were tenured, and slightly over one-third of American Indian female faculty were tenured. American Indian female faculty were concentrated in the lower ranks, especially the rank of instructor.
8. Twenty of the nation's accredited higher education institutions enrolled predominantly American Indian students.

HIRSCHORN, MICHAEL W.
"Freshman Interest in Business Careers Hits New Level, and Money Remains a Top Priority, Study Finds", The Chronicle of Higher Education, January 20, 1988, 34 (19): A31, A34.

PURPOSE

This article summarizes the findings of the annual Cooperative Institutional Research Program of UCLA.

MAJOR POINTS

1. Interest in teaching careers is up to 8.1% from an all time low of 4.7% in 1982.

2. Freshman interest in business is at peak levels--up to 24.6% from 24.1% last year.

3. The number of students who said they attended college "to make more money" reached its highest point in the 22 year history of the survey.

4. The report's findings are based on 209,627 responses gathered from 390 two- and four-year colleges and universities.

INTERSEGMENTAL POLICY TASK FORCE ON ASSEMBLY

CONCURRENT RESOLUTION 83. Expanding Educational Equity in California's Schools and Colleges, California Postsecondary Education Commission, March 1986.

PURPOSE

This report was written in response to Assembly Concurrent Resolution 83 as a means of identifying in the broadest terms possible the challenge of equal educational opportunity in California, the lessons learned from student affirmative action efforts to date, and the changes that are needed to increase educational equity and opportunity for the next generation.

MAJOR POINTS

1. Lists California's major programs to improve educational opportunities.

2. Profiles minority students in California.

3. Recommendations:

a. Clarifying school and college responsibilities.

b. Assuring improvement in the public schools

c. Increasing higher education's services to the schools.

d. Expanding higher education's services to underrepresented students.

e. Improving educational information.

f. Involving accreditation.

g. Assessing equity efforts.

4. Commitment to equity:

a. The Legislature and Governor should expand general school funding as well as specialized statewide school programs for school improvement, disadvantaged youth, and gifted and talented students, and they should focus these and similar programs toward the priorities of Recommendation 2 (b).

b. The Legislature and Governor should make available adequate State-funded student grant aid, in conjunction with institutional and federal student financial aid, to assure low-income students appropriate opportunities for access and choice among higher education institutions and reduce the debt burdens they are forced to incur through student loans.

c. State review and control agencies should recognize that the reorientation of school curricula and the reduction in dropout rates will lead to new fiscal demands that cut across segments and that are not easily accommodated in traditional budget formats.

LEE, VALERIE.
Access to Higher Education: The Experience of Blacks, Hispanics and Low Socio-Economic Status Whites, Washington, D.C.: American Council on Education. May 1985.

PURPOSE

A Harvard study reporting on the college-going experience of 11,876 class of 1980 high school seniors in which Blacks made up 11% and Hispanics comprised 10% of the sample. The study looks at Blacks, Hispanics, low SES Whites and high SES Whites. The hypothesis is that differences in college attendance are due more to social class than to racial or ethnic differences. The findings of the study support the hypothesis. The Hispanic group is looked at as a whole and also as subdivisions (Cuban, Mexican, Puerto Rican, and other Latin). Almost as much variation was found within the Hispanic group as between it and the other groups.

MAJOR POINTS

1. Each group and subgroup is profiled according to family income, parents in the home, parental education, college track/vocational track courses in high school, number of hours per week of study and TV viewing, and eighth grade expectations of college attendance.

2. The study looks at differences between sexes between/within ethnic groups.

3. Other areas of the study include:

college major

high school gpa

college gpa

high school achievement test scores

students who applied for college but did not attend

students who applied for college and are attending 2 years later

students who did not apply for college directly from high school, but are attending 2 years later

students who did not apply and are not attending

amount of financial aid received

amount of tuition

courses taken in college

occupational plans

2 yr/4 yr enrollment

withdrawal comparisons

4. Good bar graphs and statistical charts. Each group and subgroup is profiled according to family income, parents in home, parental education, college track/vocational track courses in high school, number of hours per week of study and TV viewing, and eighth grade expectations of college attendance. The study looks at differences between sexes between/within ethnic groups.

MALCOM, SHIRLEY M.
"The Place of Minorities in the Scientific and Technical Workforce". The Black Scholar, September/October 1985. pp. 50-55.

PURPOSE

With the shift to a service economy and the growing role of technology in the workplace there will be a two-tier workforce in America in the 1990's. There will be a gap based on knowledge, money, and control with the minority population primarily relegated to the bottom tier of the workforce. The political and social instability as well as the loss of talent of such a situation is unacceptable. We need to ensure that minorities will have an equal opportunity to participate at all levels in the workforce.

MAJOR POINTS

1. Educational aspects: American students are not being provided the skills and education needed in our information society. Minority youth are even less will prepared than their majority counterparts.

a. In 1978 American Indians, Afro-Americans, Mexican-Americans, and Puerto Ricans, with 18% of the US population comprised only around 2.2% of the science and engineering workforce. At the highest levels for blacks and Hispanics the greatest under-representation is seen in the physical, mathematical and computer sciences and in engineering.

b. Fewer minority students in high school take college preparatory courses in science and mathematics or acquire the level of literacy in mathematics, science and technology needed for jobs in our technological society. Black students, while they take more mathematics courses than whites, do not take the level and type of mathematics required for the "new basics".

c. Improvements for minority students have been most striking in those schools receiving federal compensatory education assistance (NAEP).

d. Reading comprehension, math and science are the general education deficits for minority students.

2. National aspects: the high quality of education of the majority of the population in Japan (through the high quality of Japanese primary and secondary education) has contributed heavily to the high productivity of its industries. Blacks and Hispanics are a growing part of the decreasing population of 18 year olds in the United States. Some of the states whose economies are the most technologically intensive anticipate growing minority populations.

3. Future aspects: Pre-college efforts stress early identification and nurturance of talented minority youth by the development and enhancement of academic skills in mathematics, science, engineering, communications, and computers, and the provision of timely and appropriate information on careers. PRIME and PRIS2M are two examples of successful interventions.

MENSTRE, JOSE P.
The Latino Science and Engineering Student: Recent Research Findings. In Michael A. Olivas, ed., Latino College students. New York: Teachers College Press, Columbia University, 1986, pp. 157-192.

PURPOSE

Reports on research conducted with Hispanic college students enrolled in science and engineering programs. The article also assesses the interplay of language and problem solving.

MAJOR POINTS

1. Reviews literature which "... supports the premise that language proficiency mediates complex cognitive tasks: p. 160-161. Specifically, the Article makes use of Cummins' (1979) "linguistic threshold hypothesis". In this perspective, there are three types of bilingualism:

a. Semilingualism "..a below-threshold level of linguistic competence in both languages".

b. Dominant Bilingualism "..above-threshold level of competence in one language".

c. Additive Bilingualism "..above-threshold level of competence in both languages".

Hypothetically, the impact of the three levels of linguistic competence on cognitive development are thought to range from negative in the case of semilingualism, neutral for dominant bilinguals, to positive for additive bilinguals.

Hispanic students in the study "appear to be semilingual".

2. Cites research that shows that, among non-academic factors, socioeconomic status is a more important predictor of success than "ethnic-group" membership per se.

3. "...Hispanic technical college students that participated in our studies are underprepared in comparison to Anglo technical college students. The areas in which Hispanics displayed underpreparation are algebraic skills, language skills, and problem solving skills requiring substantial amounts of linguistic processing". p. 184.

4. Findings "..indicate that various errors committed by the Hispanics in solving mathematic and logic problems are the result of semantic difficulties and not necessarily the result of difficulties in the content area". p. 184.

5. Recommends using microcomputers to improve verbal and quantitative skills of "limited-English-proficiency students". p. 186.

MINGLE, JAMES R.
Focus on Minorities: Trends in Higher Education Participation and Success, A Joint Publication of the Education Commission of the States and the State Higher Education Executive Officers, Denver, Colorado, July 1987.

PURPOSE

This report reviews the progress toward the full participation of minorities in higher education during the past three decades. It examines:

(1) the potential pool of qualified high school graduates available to postsecondary institutions;

(2) the participation and enrollment rates of minorities;

(3) the factors related to retention and success in undergraduate programs; and

(4) the representation of minorities in advanced-degree programs and the professions.

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MAJOR POINTS

1. The Potential Supply

a. Minorities are a growing proportion of the traditional college-age population. By the year 2025, they are expected to make up nearly 40% of all 18-24 year olds.

b. Minority high school graduation rates have increased significantly in the past 20 years but still lag behind White rates. Hispanics have the lowest rates only 62% of 18-24-year old Hispanics have high school diplomas compared to 83% of Whites.

c. The academic preparation of Black and Hispanic high school students continues to lag despite progress in recent years. National Asses-sment of Educational Progress (NAEP) reveal that 17-year-old Black and Hispanic students, on average, read only about as well as 13-year-old White students.

2. College Participation and Enrollment

a. College participation rates among Black and Hispanic college-age youths peaked in the mid-1970s and have declined since then.

b. Total minority enrollment increased 21% from 1976 to 1984, nearly three times the rate of Whites. However, much of this increase occurred before 1980. From 1980 to 1984, Black enrollment declined, as did that of American Indians.

c. Far outpacing other groups, Asian-Americans nearly doubled their 1976 enrollment level by 1984. This fast-growing minority group now makes up more than 3% of total enrollments, compared with their 2% representation in the population generally.

d. Except for Asian-Americans, the representation of minorities drops dramatically at the graduate and professional level. Blacks, who make up about 13% of the college-age youth, are 9.5% of all undergraduates and only 4.8% of graduate students.

3. Retention and Success

a. Only about half of all high school seniors go on to college full-time immediately after graduation. Only half of those enrolling in four-year institutions achieve senior status four years later.

b. Students on the "fast track" are those who achieve senior status four years after high school graduation. One of every three Asians in the class of 1980 was on the "fast track", but only one in seven Blacks and one in 10 Hispanics.

c. The factors most closely associated with both initial enrollment and later persistence in college are high school grades, family income and parents' education. Students who earn A's in high school are 25 times more likely to be on the "fast track" in college than students who earn C's. Students who come from high-income families are four times more likely to persist than those from low-income families.

d. Many minorities begin their education in two-year institutions, and success to the baccalaureate depends on transfer to a four-year institution. National and state studies, however, point to a deteriorating number of transfers from community colleges. This can be caused by high dropout rates, the lack of effective articulation agreements among colleges and roadblocks to accepting credit placed by four-year institutions and accrediting bodies.

e. In the 1960s and 1970s, institutions responded to increased numbers of minorities by forming separate counseling and support programs. More recently the trend has been to integrate these services into broader efforts to improve the academic preparation of all students in need of help.

f. Anecdotal reports from the campuses indicate that little progress has been made in race relations. Racial and ethnic groups often go their separate ways, creating a climate that may isolate students and reinforce stereotypes. Minority students may become disconnected from the life of the campus, a situation that lessens their retention and success.

g. Effective remedial and counseling programs are critical to retention. Yet many programs are poorly funded and receive low priority from institutional leaders.

h. The aspirations of students themselves can affect retention and success. States are considering a variety of "mentoring" efforts to raise the sights of minority students.

4. Minority Representation in the Professions

a. While the Black middle class has grown substantially since WW II, Black representation among such professional groups as accountants, physicians, college professors, engineers, lawyers and judges is far below their numbers in the population. For example, only about 2.6% of the employed engineers in the nation are Black.

b. The Hispanic population is a diverse group consisting largely of Puerto Ricans, Mexican-Americans and Cubans. Even with the relative success of Cuban-Americans, Hispanics remain underrepresented in the professions and overrepresented in low-skill, low-wage jobs. For example, Hispanics make up more then 11% of the teachers' aides but only about 3% of the elementary and secondary school teachers in America.

c. The number of minority doctoral recipients has grown substantially in recent years, but the progress of various groups differs significantly. About the same number of Hispanic doctorates are awarded annually as Asian-American, yet the Asian-American population is half the size of the Hispanic population.

d. Only about 900 doctorates are awarded to Blacks annually, a number that has declined since the 1970s. While Blacks have diversified their interests in recent years, a majority of doctorates are still awarded in education. Blacks and Hispanics remain severely underrepresented among science and engineering doctorates, greatly limiting the available faculty pool.

5. Rekindling the American Dream

a. Minorities cannot achieve full participation without access to institutions, but access is not enough. Successful completion of a demanding, high-quality undergraduate curriculum is the key to minority success.

b. The aspirations of American minority youth must be rekindled. No equivalent exists in higher education to the enormously successful "Be All That You Can Be" campaign for military recruitment.

c. Social class remains a dominant force in determining access and success in higher education. Looking for evidence of commitment through programs labelled minority often can miss the point. The more important question is: Do the institutions' financial and academic programs and general climate contribute to the success of minorities and other disadvantaged students?

d. Public policy must be broader than merely increasing college attendance. With less than 20% of minority youths enrolled in college, postsecondary institutions are partners, not competitors, with industry, the military and other public employment programs.

MONTIEL, MIGUEL, PADILLA, RAYMOND V. and WONG, PAUL. Staying and Achieving--A Report Prepared for The Phoenix Union High School District Drop-out Task Force. January 10, 1986.

PURPOSE

The purpose of this study was to provide perspectives on the PUHSD by:

- statistically analyzing the school system's existing data
- observing one of the schools
- conversing extensively with school officials, teachers, parents, students, and among themselves.

Basic assumption of the report--drop-out problem involves the school system from elementary schools to universities; the local, state, and federal government; the community at large; and the family.

MAJOR POINTS

1. Indicators of potential drop-outs:

o have dropped out one or more times in the current year or previous years

o have entered the district from feeder schools with high-minority concentrations

o are from an ethnic minority background

o attend high schools having high drop-out rates

o have been suspended one or more times

o have high absenteeism and/or

o demonstrate low or inadequate academic performance

2. The study presents a statistical profile of the drop-out problem in PUHSD. Recommendations for action are also listed. Included in the study are four qualitative images of drop-outs and a typological study of school interruptions.

3. The report seemed to focus on changing the high schools' methods of scheduling classes, determining

tardy and excused absences, and the 10 consecutive day definition of drop-out.

MUNOZ, DANIEL G.
Identifying Areas of Stress for Chicano Undergraduates. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 131-156.

PURPOSE

An attempt to assess the adjustment demands on Chicano undergraduates, by measuring and interpreting "stress-inducing aspects of the Chicano experience in higher education".

MAJOR POINTS

1. Characteristics of sample of Chicano students interviewed reflect the socioeconomic status of persons of Mexican-descent occupy in the state of California.

a) Typical student's parents' highest educational level was sixth to ninth grade.

b) Most parents were born and educated in Mexico.

c) Highest level of occupation was generally at the unskilled level.

2. Author used a stress scale, administered to both Anglo and Chicano students. "...of the twenty-one significantly different items, Chicanos rated seventeen more stressful than did Anglos. The greatest stresses for Chicanos occurred in the following order: financial, academic, familial, and personal. Anglo students reported greater stress levels on only four items, of which three fell in the personal area". p. 138.

a) The major financial concerns of Chicano students were: "not having money for bills", "the uncertainty of receiving financial aid", and "finding employment while going to school that would not jeopardize academics".

b) Three other financial events generated more stress for Chicano students: "contributing money to help support one's family", "being obligated to repay student loans", and "parents' willingness to provide personal income information for financial aid applications".

3. More Chicanos had been employed and were employed at the time of interview than Anglos.

4. Potentially stressful academic events that Chicano students scored higher on include: "Uncertainty of being accepted by a college or graduate school", "writing a paper", "taking a test", "taking unmeaningful, irrelevant courses", "adjusting to a new school environment", "seeking help with academic problems", "not meeting teacher's expectations".

5. In general, results of the study indicate considerable anxiety about the academic experience for Chicanos, and a general feeling of alienation or not belonging.

6. Findings support other research that shows that "responding to family needs is an ultimate priority for the Chicano". p. 143.

NIELSEN, FRANCOIS
Hispanics in High School and Beyond. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College

Press, Columbia University, 1986, pp. 71-103.

PURPOSE

Takes a critical look at Hispanic education research and policy issues raised by a national survey of students in the tenth and twelfth grades the "High School and Beyond" survey.

MAJOR POINTS

1. Recommends research on school retention that calls attention to multiple reasons for leaving school:

a) Dropout emphasizing individual, idiosyncratic reasons.

b) Pushout emphasizing organizational causes such as school inadequacy.

c) Pullout emphasizing greater attraction of opportunities outside of school.

2. Figures suggest that the major educational barrier for Hispanics has been high school graduation. "Once Hispanic students have graduated, they have had the same or a better chance to go on to college" p. 89.

3. The author cites research with the survey that a "composite Hispanicity indicator" (a propensity to know Spanish well and to speak it frequently) "...has positive effects on achievement except for age (which is the measure of delayed schooling), after controlling for a set of background variables". p. 94.

NORA, AMAURY.
"Determinants of Retention Among Chicano Students: A Structural Model". Research in Higher Education, 26(1). 1987. Agathon Press, Inc.

PURPOSE

This article reports on a retention study of 158 Chicano community college students using Tinto's student attrition model.

MAJOR POINTS

1. For Chicano community college students, neither academic integration nor social integration affected retention rates significantly. Instead, institutional/goal commitments affected student retention measures significantly more than did academic and social integration measures.

2. Two-year institutions, where a disproportionate number of Chicano students are found, may be culturally different from four-year residential institutions.

3. Two precollege factors were found to be significant in the retention process--high school grades and encouragement by others before entrance in a community college were determinants of institutional/goal commitments.

4. Colleges need to be aware that many of their minority students are not academically prepared and have received little, if any, support to attend college; therefore they do not have the institutional commitment needed to be retained. Colleges need to plan programs with development of institutional/goal commitments of students as their aim.

5. Suggestions for building institutional commitment:

a) Offer remedial programs, honors programs, an accelerated curriculum, courses for independent study, and transfer courses to meet ALL students' needs.

b) Faculty and counselor involvement in orientation programs/courses.

c) Courses relating directly to career and academic goals should be required during the first semester.

OLIVAS, MICHAEL A.
Introduction Research on Latino College Students: A Theoretical Framework and Inquiry. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 1-25.

PURPOSE

Examines issues in Hispanic education research and surveys the political and socioeconomic context of Hispanic education.

MAJOR POINTS

1. Statistics show that Hispanics ". . .have not entered American institutions of higher learning in any significant fashion".

2. Conclusions of research literature on Hispanic education usually fall into one of the two categories:

a) Those that blame Hispanics for not providing the proper home environment;

b) Those that argue for a "cultural deprivation" explanation and present a model for remediation.

3. High enrollments of Hispanics in community colleges raises questions of equity in allocation of resources in two- and four- year institutions.

4. Many Hispanics (and most low-income families) have difficulty in applying for financial assistance. For example:

a) Missing deadlines.

b) Concern with the impact of financial aid on public assistance.

c) Problems in documenting income.

5. Graduate enrollments for Hispanics are low, and there is disparity in research and teaching assistantship awards.

6. Hispanics generally occupy subordinate positions in the organizational and political structures of education.

7. "...marginalization is a major feature of Hispanic participation in higher education, confirmed most notably in attrition and underparticipation data". p. 15.

OLIVAS, MICHAEL A.

Financial Aid for Hispanics: Access, Ideology, and Packaging Policies. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp.281-295.

PURPOSE

Analysis of baseline data on "receipt of financial aid by disadvantaged Hispanics". It examines characteristics of students and financial aid received, institutional financial aid policies, and models for aid awards. The author recommends several packaging policies for aid administrators. Data are from the

Hispanic Talent Search.

MAJOR POINTS

1. "The most striking single finding is the small extent to which any packaging is being performed for Hispanics: Over 60 percent of all the students received only one source of aid, almost exclusively Basic Educational Opportunity Grants, known as Pell Grants since 1981.." p. 283.

2. Tabulating the data by median family income and by type of institution shows that for every institutional type except public two-year institutions, the lowest-income students received less aid than the lower-middle category.

3. Fewer students attending public two-year institutions received financial aid than students attending other types of institutions. Community colleges also rely heavily upon federal aid for Hispanics. There are two important implications of these observations:

a. Hispanics are disproportionately enrolled in public two-year institutions, hence enrollment patterns may inhibit access to financial resources.

b. Heavy reliance upon federal aid in two-year institutions make the aid programs vulnerable to federal cutbacks.

4. There is good evidence that different types of aid packages facilitate persistence. In particular, college work study improves the likelihood of students staying in college.

5. Financial aid packaging can be a positive factor in access and persistence.

The author recommends comprehensive, multisource packages of financial aid, with careful attention to the potential impacts on minorities in designing the packages.

ORTIZ, VILMA
Generational Status, Family Background, and Educational Attainment Among Hispanic Youth and Non-Hispanic White Youth. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 29-46.

PURPOSE

Assesses educational attainment, as measured by highest grade completed, delay in school, and high school dropping out, for a longitudinal sample of Hispanic (Mexican-descent and Puerto Rican-descent) youth and non-Hispanic white youth, and addresses the impacts of family background (education and socioeconomic status) on educational attainment by generation.

MAJOR POINTS

1. The study finds that Hispanic youth are more educationally disadvantaged than non-Hispanic white youth, partly because of the disadvantaged family backgrounds of Hispanic youth.

2. Generational status was important in Hispanic attainment. Controlling for family background, third generation Hispanic youth, for example, ". . .do not differ significantly from non-Hispanic white youth". p. 43.

POSTSECONDARY EDUCATION PLANNING COMMISSION OF THE DEPARTMENT OF EDUCATION, STATE OF FLORIDA.
The Master Plan for Florida Postsecondary Education, Supplement Number 2, Enhancing the Participation of Minority and Disadvantaged Students in Postsecondary Education, Tallahassee, Florida. March 17, 1984.

PURPOSE

The commission identifies and recommends actions to solve the problem of increasing quality while at the same time increasing access for under-represented minority and disadvantaged students in higher education. The report looks at K-12 education, counseling, linkages and cooperation between K-12 and postsecondary education, adult basic education, college preparatory education, standardized testing, retention, minority faculty representation, financial aid issues, and graduate and professional education. Increased accountability in all areas was emphasized.

MAJOR POINTS

1. Recommendations are made in all areas. Pilot programs, financial incentives for teachers and schools, additional state financial aid for minorities, higher grading standards on standardized tests, and a formal "college preparatory" program in community colleges for students beyond high school but not ready for college level work were among the recommendations.

2. Florida has an assessment test (CLAST) already in place.

3. A good summary of one state's view of the problem and how to address it. Reflects our beliefs on socioeconomic status, parental, and peer influences. Good format of text.

4. Hispanics in Florida are mainly of Cuban descent.

RAMIREZ, GENEVIEVE M.
Retention of the Latino University Student: The Case of CSULB California State University Long Beach, Long Beach, CA 90840 ERIC document ED 279 482

PURPOSE

The report examines characteristics, needs, and actual experiences of Hispanic students through demographic characteristics obtained from university records, comparisons of Student Affirmative Action Outreach, and random samples.

MAJOR POINTS

1. Findings indicate academic failure-/difficulty results from unrealistic expectations, lack of clear personal attainable goals, general alienation from the institutional mainstream, and interference of external circumstances.

2. Positive influences are appropriate course scheduling incorporating skills development with academic solids, and clear college major and career goals.

3. In regard to cultural background, including the family in the process was encouraged through activities such as orientations, tours, meeting faculty and staff, and advisor/mentor contact.

RICHARDSON, RICHARD C., JR. and BENDER, LOUIS W.
Helping Minorities Achieve Degrees: The Urban Connection. A report to the Ford Foundation. National Center for Postsecondary Governance and Finance Research Center at ASU, College of Education, Tempe, AZ, March, 1986.

PURPOSE

A primary goal of this study was to describe state policies and institutional practices as these appeared to influence student persistence in pursuit of the baccalaureate. The study focused on the articulation of minority students between urban community colleges and urban universities.

MAJOR POINTS

1. Describes state concerns and priorities as viewed through the eyes of coordinating board officials in the eight states included in this study.

a) The proportion of minority students enrolled in urban community colleges ranged from two to four times their proportion in urban universities.

2. Discuss the concept of conflicting cultures of universities and community colleges as an approach to understanding the barriers urban students experience in their pursuit of a baccalaureate degree.

a) Community colleges tend to adapt academic expectations to student performance.

b) Teaching and service interfere with universities' efforts to achieve major research status.

c) Urban universities employ few minority faculty or administrators.

3. Chapter 4 is an analysis of essays written by students in the study colleges describing their home environments, their reasons for attending a community college and their future goals.

a) Most student have job responsibilities, family responsibilities, and are likely to be first generation college students.
b) Fewer students are interested in earning a baccalaureate degree and more in obtaining job skills for immediate employment.

c) Students were categorized as one of the following "types": self-discovery, undecided, innocence, immigrants, perseverance, devotees, non-conformists, seeking self-worth, prideful, believers.

4. Provides a detailed treatment of community college programs and university programs as these impact on students interested in completing a four-year degree.

5. Implications of the study are presented as recommendations to community colleges, universities, and state coordinating boards. Student recommendations are also included.

RICHARDSON, RICHARD C. JR. and BENDER, LOUIS W.
Fostering Minority Access and Achievement in Higher Education. San Francisco: Jossey-Bass Publishers, 1987.

PURPOSE

The central question addressed in this book is why more Hispanic and black students do not transfer from the community colleges and successfully complete baccalaureate programs at 4 year institutions. The intent of this study was to gather evidence about existing arrangements and strategies for improving the transfer process. (N.B.) The study excludes Asians because they are not considered underrepresented and Native Americans due to their extremely small numbers in the colleges studied.

MAJOR POINTS

1. Cubans are more likely to attend college and have higher family incomes than other Hispanic subgroups.

2. The problem is one of access to 4 year institutions rather than participation in the college experience.

3. Community colleges and universities represent different cultures in terms of their belief systems and the behavior that gives these beliefs meaning. Two factors complicate students' adjustment to the different cultures:

a) Absence of friends or relatives who have had experience with higher education and who understand and support the sacrifices necessary for its attainment.

b) Lack of understanding among community colleges and universities of the differences between their cultures and an absence of respect for the differences in attitudes and behavior that these cultures produce.

4. Universities see community colleges as offering watered down courses, overly protective, and too willing to go to great extremes to facilitate enrollment growth.

5. Community colleges see universities as elitist, not committed to equal access, and ignorant of the role of community colleges.

6. Mandatory placement in courses based on reading test scores have proven to be an aid in student retention.

7. Minority students require structured learning environments with role models for support and encouragement. Computer labs and self-paced learning have limited value.

8. Once behind in mathematics, remedial courses have limited value. Success in math requires repeated exposure over time. Improving math skills is a key to increasing the numbers of minorities achieving the baccalaureate degree.

9. Strategies for minority high school students:

a) Assign minority college staff members as liaisons.

b) Identify potential students early.

c) Involve college faculty with the high school.

d) Increase motivation and social involvement through summer programs, cultural and athletic events, and college led guidance programs in high school.

10. Faculty exchanges are the single most promising strategy for reducing transfer barriers.

11. New Jersey has one of the best systems for assessing student preparation: 48% of students en-

tering community colleges required remediation. 13% remained enrolled with a GPA of C or better 2 years later.

12. Final chapter lists general recommendations for community colleges, universities, and state boards.

SANTOS, RICHARD
Hispanic High School Graduates: Making Choices. In Michael A. Olivas, ed. Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 104-127.

PURPOSE

An inquiry into the "factors that influence career related decisions by Hispanic youth who graduate from high school" using data from the National Longitudinal Surveys of Youth Labor Market Experiences. Data from mid- to late 1970's.

MAJOR POINTS

1. In 1978, Hispanics represented only four percent of undergraduate students. Once Hispanics graduate from high school, they are as likely as other graduates to attend college. Hispanics are the least likely to enroll in four-year colleges. Nearly half enroll in two-year colleges, compared to about one-third of other graduates. p. 107.

2. Hispanics are intermediate between non-Hispanic whites (low) and non-Hispanic Blacks (high) in receipt of college financial aid. There is important variation by Hispanic group.

3. Overall, major variables that were found to significantly affect the decision to attend college included gender, enrollment in a college preparatory program, knowledge of the work of work..., educational aspirations, and the educational aspirations of friends". p. 11.

    a) Black and white males were less likely to attend, but gender difference for Hispanics was not statistically significant.

    b) Cubans were more likely to attend than Chicanos, who were like Puerto Ricans and other Hispanics. "Other Hispanic-related variables such as nativity or language did not significantly affect the decision to attend college". p. 114.

4. Cites research on the influence of socioeconomic factors on the decision to attend college (not clear what the population is, but it appears to be the population at large) that indicates that family income has been found to be the least important influence on college attendance, compared with the other typical components of socioeconomic status.

5. Hispanics, in general, do not differ in many of the basic considerations for attending college, but they do differ in the types of colleges attended. Two-year colleges are the mode for Hispanics.

6. Results show that Hispanic high school dropouts do not have many alternatives for training.

TINTO, VINCENT.
Leaving College
Chicago: University of Chicago Press, 1987.

PURPOSE

This book presents Tinto's model and theory on college student persistence.

MAJOR POINTS

1. Approximately 59 out of 100 college entrants will obtain some form of college degree.
2. Three-fourths of dropouts leave in the first year of college.
3. The model posits that other things being equal, the lower the degree of one's social and intellectual integration into the academic and social communities of the college, the greater the likelihood of departure.
4. For persons weakly affiliated with any college community the effect of external forces (family, community) may be great enough to alter one's goals and commitments and to leave the college.
5. Suggestions for successful retention programs:

a) Institutions should insure that new students enter with or have the opportunity to acquire the skills needed for academic success.

b) Institutions should reach out to make personal contact with students beyond the formal domains of academic life.

c) Institutions' retention actions should be systematic in character.

d) Institutions should start as early as possible to retain students.

e) The primary commitment of institutions should be to their students.

6. Education, not retention, should be the goal of institutional retention programs.
7. Financial issues are of secondary importance in the retention process.
8. No prior reason why the concept of incorporation into the intellectual and social life of the college necessarily requires that all minority students be provided with separate and highly differentiated social and academic settings.

U.S. DEPARTMENT OF LABOR.
Work Force 2000, 1987.

PURPOSE

This paper projects the influence of demographic trends in the United States in respect to the labor force of the 1990's and beyond.

MAJOR POINTS

1. By 1990, 1 out of 5 new labor force entrants will be a minority youth.
2. Women, minorities, and immigrants will account for more than 80% of the net additions to the labor force between now and 2000.

a) Black women will comprise the largest share of the increase in the non-white labor force. By 2000, black women will outnumber black men in the workforce. Black men are 7% less likely to be in the workforce than white men. Black women are 4% more likely to be in the labor market.

b) From 1970 to 1984 the proportion of prime age black men in the labor force dropped from 79% to 74%, while the proportion of black families headed by women rose from 28 to 43%.

3. Greater employment and growth will be in the South and West.

4. Jobs will be service oriented.

5. New jobs in the economy will strongly favor the most educated sector of the labor force.

6. Blacks and Hispanics are overrepresented among occupations likely to suffer high job losses during the 1980's. Situation is worse for men than for women.

7. Blacks and Hispanics are concentrated in a small number of central cities beset by severe problems. 57% of blacks and 49% of Hispanics live in central cities. 40% of all blacks live in 11 cities; only 2 of which are in high growth areas.

8. The prospect that minorities will comprise a very large fraction of the new additions to the labor force over the next 15 years appears on the surface to present an unprecedented opportunity. But the pattern of job growth in higher technology occupations requiring more education and the likelihood of greater employment gains in metropolitan regions with fewer minority residents, suggests that this result is not assured.

9. Immigrants are mostly from Latin America and Asia. Studies suggest they are complimentary to, rather than in competition with native minority workers.

a) Immigrants (not specified by ethnicity) will represent the largest share of the increase in the population and the work force since WW I. Approximately 450,000 (750,000 including illegal) are expected to enter the country each year over the next 15 years.

VALVERDE, LEONARD A. and ROBERTSON-COURTNEY, PHYLLIS. "Strategies for Increasing Participation of Hispanics and Blacks in Higher Education". University of Texas at Austin.

PURPOSE

A questionnaire for study of recruitment and retention strategies dealing with Hispanic and black students, and minority faculty employment and promotion.

MAJOR POINTS

1. List of suggestions addressing retention, recruitment, graduate enrollment, and employment which can be rated high, medium, and low.

2. Will probably be publishing their findings. Due date for return of the questionnaire was July 15, 1987.

VERDUGO, RICHARD R.
Educational Stratification and Hispanics. In Michael A. Olivas, ed., Latino College Students. New York: Teachers College Press, Columbia University, 1986, pp. 325-347.

PURPOSE

The article looks at the process by which Hispanics are sorted and ranked in educational systems. It reviews literature on educational conditions of Hispanics, major findings from the social stratification literature, and synthesizes the information to explain the impact of stratification on educational performance and outcomes.

MAJOR POINTS

1. "The Data presented above point out that Hispanics drop out at greater rates and tend to be delayed in their educational attainment as compared to whites. These results are remarkably consistent at all three levels of the educational system:. p.328.

2. "What exists, then, is a system of stratification where Hispanics are sorted, ranked, and processed through the educational system in a manner that produces little or no actual intergenerational or intragenerational social mobility. In conclusion, it seems that the educational system reproduces a given socio-economic order based, to a great degree on ethnic- and racial-group membership." p. 344.

WICHE
Regional Policy Committee on Minorities in Higher Education. Shaping the Future of the Southwest Background Paper. Western Interstate Commission for Higher Education, April, 1987.

PURPOSE

This paper is the draft report of the committee researching minority access to higher education in the five southwestern states.

MAJOR POINTS

1. Provides background statistics on minority populations and their educational, economic, and employment characteristics.

2. Unless the current patterns and outcomes in the education of minorities are changed, the schools will fall increasingly behind in preparing these students to continue their education and in meeting society's needs for an educated and technically skilled work force.

3. At least three important factors within the school environment affect the transition of minority students into post-secondary education:

a) There are differences in preparation in regard to curricula, exposure to math and science, availability of computer equipment, and other conditions in elementary and secondary education.

b) There are noticeable differences in performance levels, reflected in standardized test scores, grade point averages, and other factors related to conditions inside and outside the school environment.

c) As a result of patterns in preparation and persistence in school, there are significant differences among Black, Hispanics, Whites, Asians, and other population groups in the proportion continuing on to each successive level of education.

4. Resource distribution needs to be related to achieving the goal of equity in higher education as defined in terms of student needs and societal goals.

a) The paper looks at comparisons of institutional support among institutions with high and low concentrations of minority students.

b) Trends are examined regarding the availability of student financial aid, and discusses some of the effects of these trends and the outlook for the future.

c) It looks at student financial aid in the five southwestern states and the research related to minority student participation in these programs.

WICHE
Regional Policy Committee on Minorities in Higher Education. From Minority to Majority: Education and the Future of the Southwest. Western Interstate Commission for Higher Education, September, 1987.

PURPOSE

Committee members from Arizona, California, Colorado, New Mexico, and Texas address the effects of the minority population in regard to integration into society and to restructure education as a primary means to achieve both individual opportunity and social progress. The five goals and twenty recommendations of the committee are quoted below:

MAJOR POINTS

1. Educate for a multicultural society.

a) Recognize the diversity of students, and reflect that diversity in educational policies and practices.

b) Integrate diverse cultural perspectives into the overall educational process.

c) Ensure that all students become fully proficient in the English language while recognizing the value of multilingualism for individuals and society.

d) Expect all students to succeed, and make sure that this expectation of success is shared by teachers, administrators, parents and students themselves.

2. Keep minority students in school.

a) Provide a core curriculum at the elementary and secondary levels that challenges all students and prepares them for the next stage in their education.

b) Give top priority to the dropout problem at the elementary and secondary levels.

c) Involve states more directly in halting the loss of minority students from the education system.

3. Double the proportion of minority college graduates.

a) Improve recruitment and selection procedures in the interest of increasing the number of minority students in higher education.

b) Individualize student assessment and student services.

c) Increase retention rates of minority students in college through comprehensive and integrated programs.

d) Coordinate academic programs and provide the support necessary for students to move more easily from high school to college, from two-year to four-year institutions, and from degree completion to employment.

4. Bring more minorities into teaching, educational leadership and the professions.

a) Increase the number of minority teachers and ensure that these teachers enter into the leadership of education.

b) Bring more minority students into graduate and professional education.

c) Increase retention in graduate and professional programs by creating an environment that supports minority students and fosters strong faculty-student relationships.

d) Build a network among universities, graduate programs, colleges, schools, professional groups, and business to interest and encourage more minority students to pursue graduate and professional degrees.

e) Pursue vigorously affirmative action goals in faculty hiring, and take other steps to increase the representation of minorities in higher education leadership.

5. Use financial resources to promote equity in education.

a) Restructure the methods for funding elementary and secondary education to ensure equal educational opportunity.

b) Examine the financial support for higher education and the allocation of that support in light of the economic circumstances and educational needs of minority students.

c) Halt the erosion of student aid, particularly of programs that encourage minority enrollments, and promote financial planning for college education.

d) Examine loan programs in terms of their effect on students'educational decisions and on the achievement of society's goals for education.

PROGRESS REPORT: ACCESS AND PERSISTENCE OF MINORITY STUDENTS IN THE ARIZONA UNIVERSITIES

AUGUSTUS S. COTERA

ASSISTED BY
VINETTE COWART, JOHN J. WOOD AND NORMANDO DEHALLE

Augustus S. Cotera is currently serving as Associate to the President, Executive Director of NAYuma. He was Assistant to the President at Northern Arizona University from 1980-1987 and has been a Professor of Geology at Northern Arizona University since 1970. He also served as Professor of Geology at Allegheny College Meadville, Pennsylvania.

Vinette Cowart is a graduate research associate at Arizona State University working on a PhD in Higher Education. Prior to coming to ASU in 1986, she was Program Coordinator of minority programs in the College of Engineering at the University of Alabama in Birmingham and Assistant Director of Admissions and Acting Director of Enrollment Management at Oregon Institute of Technology. Since beginning her doctoral work at ASU, she has worked with the College of Education and the Hispanic Mother Daughter Program. She also holds certification as a rehabilitation counselor and as an elementary teacher.

John J. Wood is a professor at Northern Arizona University where he has been teaching antthropology for 22 years. He is a cultural anthropologist with a decade of applied research experience with the Navajo in northern Arizona. He was a member of the Arizona Universities' Study Group on Minority Student Recruitment and Retention, has served as the chair of the Affirmative Action Committee at Northern Arizona University, and has been involved in policy research and evaluation of minority affairs in Arizona universities for the past eight years. His recent publications deal with the impacts of Navajo livestock reduction, and land and religion in Navajo culture.

Normando DeHalle is currently serving as Assistant to the President, Affirmative Action, at Northern Arizona University.

THE ARIZONA UNIVERSITIES

THE ARIZONA UNIVERSITIES

Headcount Enrollment by Ethnic Distribution

Bachelor Degrees Awarded by Ethnicity

Student Financial Assistance - Total Awards by Ethnicity for

ASU
NAU
UA

Ethnic Student Financial Assistance

Faculty (ASU, NAU, UA) 1982 - 1987

Total
Hispanic
Black
Indian
Asian

New Undergraduate Students - Withdrawals, Persistence,

Graduation and Summary

ASU
NAU

THE ARIZONA UNIVERSITIES
Headcount Enrollment by Ethnic Distribution
Fall 1984 - Fall 1987

Univ	Hisp	Black	Indian	Asian	Total Mnrty	Total Non Minority	Grand Total
Fall 1984, Spring 1985, Summer 1985							
NAU	1841	481	2336	430	5088	26233	31321
ASU	4511	1958	1219	2168	9856	82401	92257
U-A	5284	1132	629	1520	8565	49302	57867
Fall 1984							
NAU	740	189	696	130	1755	10430	11126
ASU	1863	819	472	874	4028	35073	39101
U-A	1946	406	241	549	3142	18995	22137
Fall 1985							
NAU	767	208	698	76	1749	10328	12077
ASU	1914	838	440	894	4086	34836	38922
U-A	2274	508	262	813	3857	22438	26295
Fall 1986							
NAU	749	204	797	84	1834	10861	12695
ASU	2063	860	430	1012	4365	35453	39818
U-A	2191	463	260	716	3630	22451	26081
Fall 1987							
NAU	794	174	742	86	1796	11128	12924
ASU	2101	872	480	1076	4529	36525	41054
U-A	2198	482	276	828	3784	23751	27535
FOUR YEAR MEANS - FALL 1984-87							
NAU	762	194	733	94	1783	10687	12205
ASU	1985	847	455	964	4252	35472	39724
U-A	2152	465	260	726	3603	21909	25512

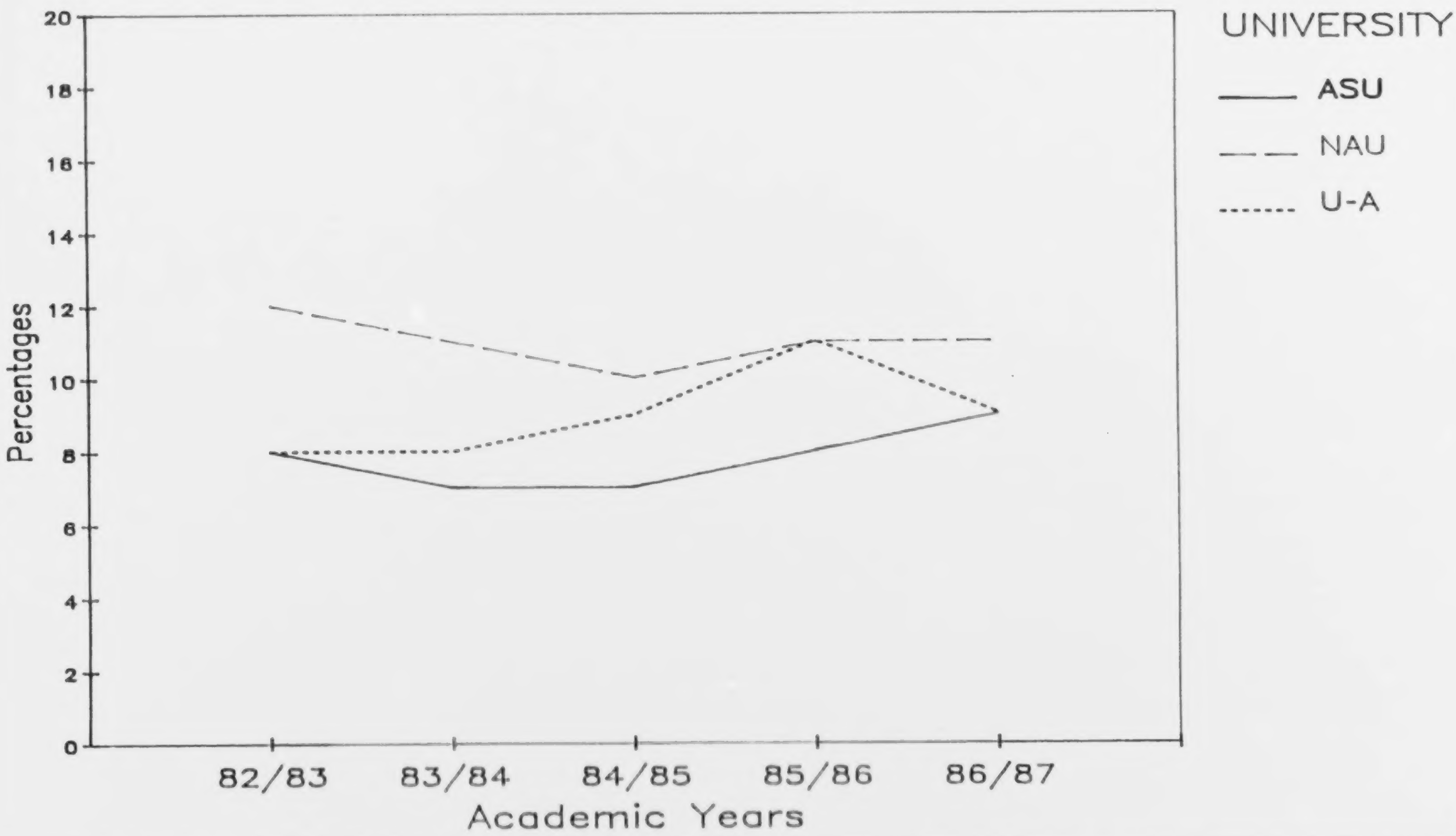
THE ARIZONA UNIVERSITIES
Bachelor Degrees Awarded By Ethnicity
1982/83 - 1986/87

Yr	Indian		Asian		Black		Hisp		Total Minority		Total Non Minority		Grand Total	Unv
	#	%	#	%	#	%	#	%	#	%	#	%		
82	35	0.7	91	1.8	78	1.6	176	3.6	380	7.7	4544	92.3	4924	ASU
--	71	4.2	22	1.3	22	1.3	88	5.2	203	12.1	1481	87.9	1684	NAU
83	31	0.8	37	0.9	54	1.4	177	4.6	299	7.7	3572	92.3	3871	U-A
83	24	0.5	105	2.2	57	1.2	153	3.1	339	7.0	4534	93.0	4873	ASU
--	56	3.4	23	1.4	18	1.1	91	5.5	188	11.4	1469	88.6	1657	NAU
84	23	0.6	48	1.3	39	1.0	205	5.4	315	8.4	3453	91.6	3768	U-A
84	36	0.7	86	1.7	65	1.3	162	3.2	349	6.9	4681	93.1	5030	ASU
--	48	2.8	21	1.2	23	1.3	86	5.0	178	10.4	1531	89.6	1709	NAU
85	28	0.8	57	1.5	32	0.8	205	5.5	322	8.7	3400	91.3	3722	U-A
85	37	0.7	98	2.0	75	1.5	206	4.1	416	8.3	4582	91.7	4998	ASU
--	62	4.0	14	0.9	14	0.9	82	5.3	172	11.2	1367	88.8	1539	NAU
86	27	0.8	89	2.6	45	1.3	215	6.2	376	10.8	3105	89.2	3481	U-A
86	38	0.7	102	1.9	75	1.4	246	4.7	461	8.7	4815	91.3	5276	ASU
--	54	3.6	5	0.3	12	0.8	88	5.8	159	10.5	1362	89.5	1521	NAU
87	13	0.4	52	1.4	39	1.1	228	6.2	332	9.1	3320	90.9	3652	U-A

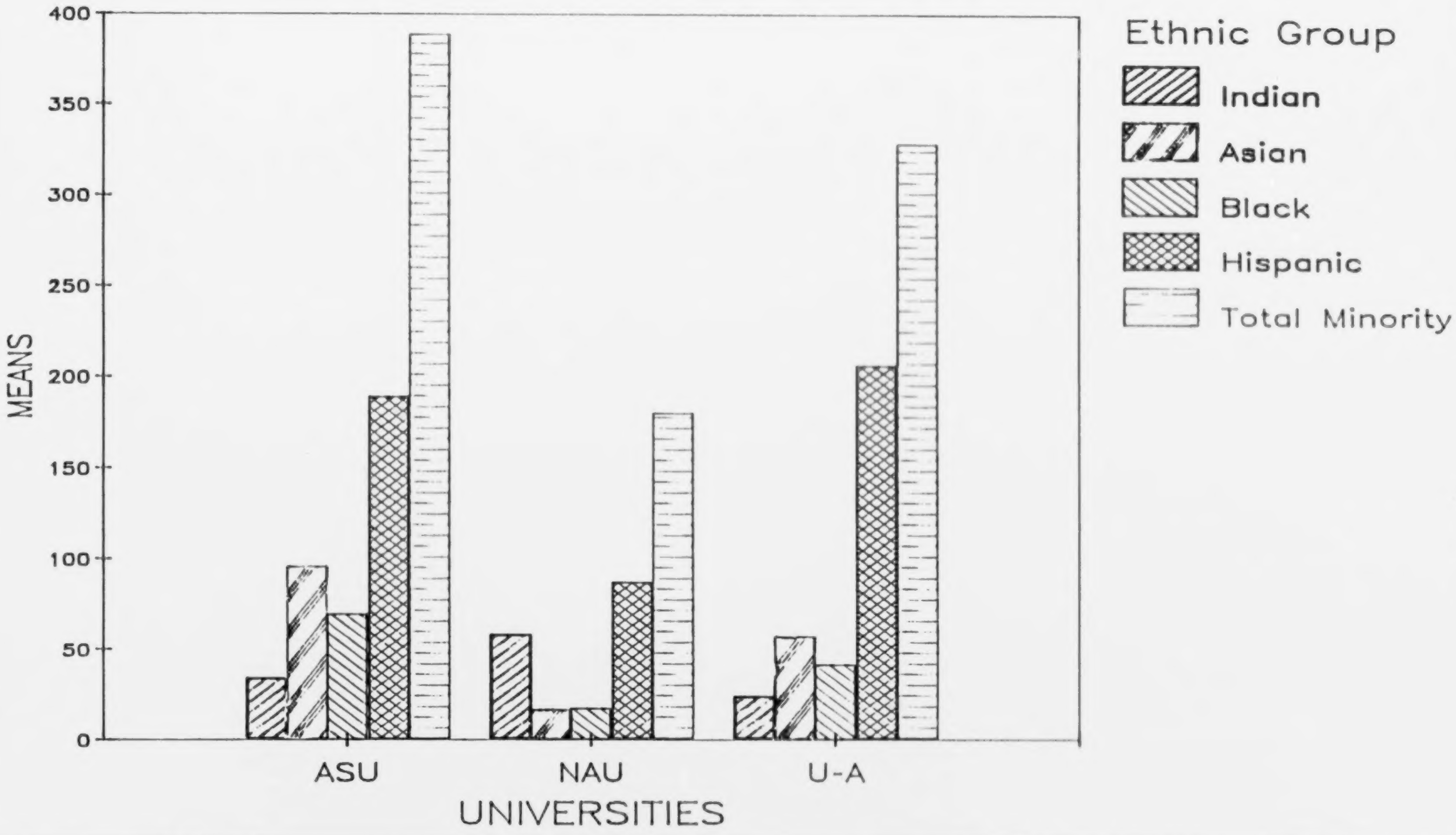
FIVE YEAR MEANS AND STANDARD DEVIATIONS

	Indian		Asian		Black		Hisp		Total Mnrty		Total Non Mnrty		Grand Total	
	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
ASU	34	6	96	8	70	9	189	38	389	50	4631	118	5020	156
NAU	58	9	17	8	18	5	87	3	180	16	1442	74	1622	86
U-A	24	7	57	20	42	8	206	19	329	29	3370	174	3699	145

THE ARIZONA UNIVERSITIES
Bachelor Degrees Awarded
Total Minority
1982/83 - 1986/87



THE ARIZONA UNIVERSITIES
Bachelor Degrees Awarded by Ethnicity
Five Year Mean
1982/83 - 1986/87



THE ARIZONA UNIVERSITIES
Student Financial Assistance
Total Awards By Ethnicity
Arizona State University

Typ	Year	Hisp	Black	Indian	Asian	Total Mnrty	Total Non-Mnrty	Grand Total
Sch	84-85	454	245	137	193	1029	4113	5142
	%	9	5	3	4	20	80	
	85-86	634	273	225	155	1287	5001	6288
	%	10	4	4	3	20	80	
	86-87	732	331	221	198	1482	5370	6852
	%	11	5	3	3	22	78	
Grn	84-85	595	310	204	319	1428	5984	7412
	%	8	4	3	4	19	81	
	85-86	598	339	293	211	1441	5824	7265
	%	8	5	4	3	20	80	
	86-87	598	347	336	228	1509	5302	6811
	%	9	5	5	3	22	78	
Lon	84-85	638	418	235	158	1449	8594	10043
	%	6	4	2	2	14	86	
	85-86	671	435	156	231	1493	8579	10072
	%	7	4	2	3	15	85	
	86-87	640	389	157	236	1422	7310	8732
	%	7	4	2	3	16	84	
Emp	84-85	401	179	138	80	798	4478	5276
	%	7	4	3	1	15	85	
	85-86	439	192	96	207	934	5196	6130
	%	7	3	2	3	15	85	
	86-87	346	173	83	171	773	4427	5200
	%	7	3	2	3	15	85	
Tot	84-85	2088	1152	714	741	4695	23169	27864
	%	7	4	3	3	17	83	
	85-86	2342	1239	770	804	5155	24600	29755
	%	8	4	3	3	17	83	
	86-87	2316	1240	797	833	5186	22409	27595
	%	8	4	3	3	19	81	
Und	84-85	1142	632	440	411	2625	14763	17388
	%	7	4	2	2	15	85	
	85-86	1149	612	411	453	2625	15817	18442
	%	6	3	2	2	14	86	
	86-87	1322	649	457	504	2932	14409	17341
	%	8	4	3	3	17	83	

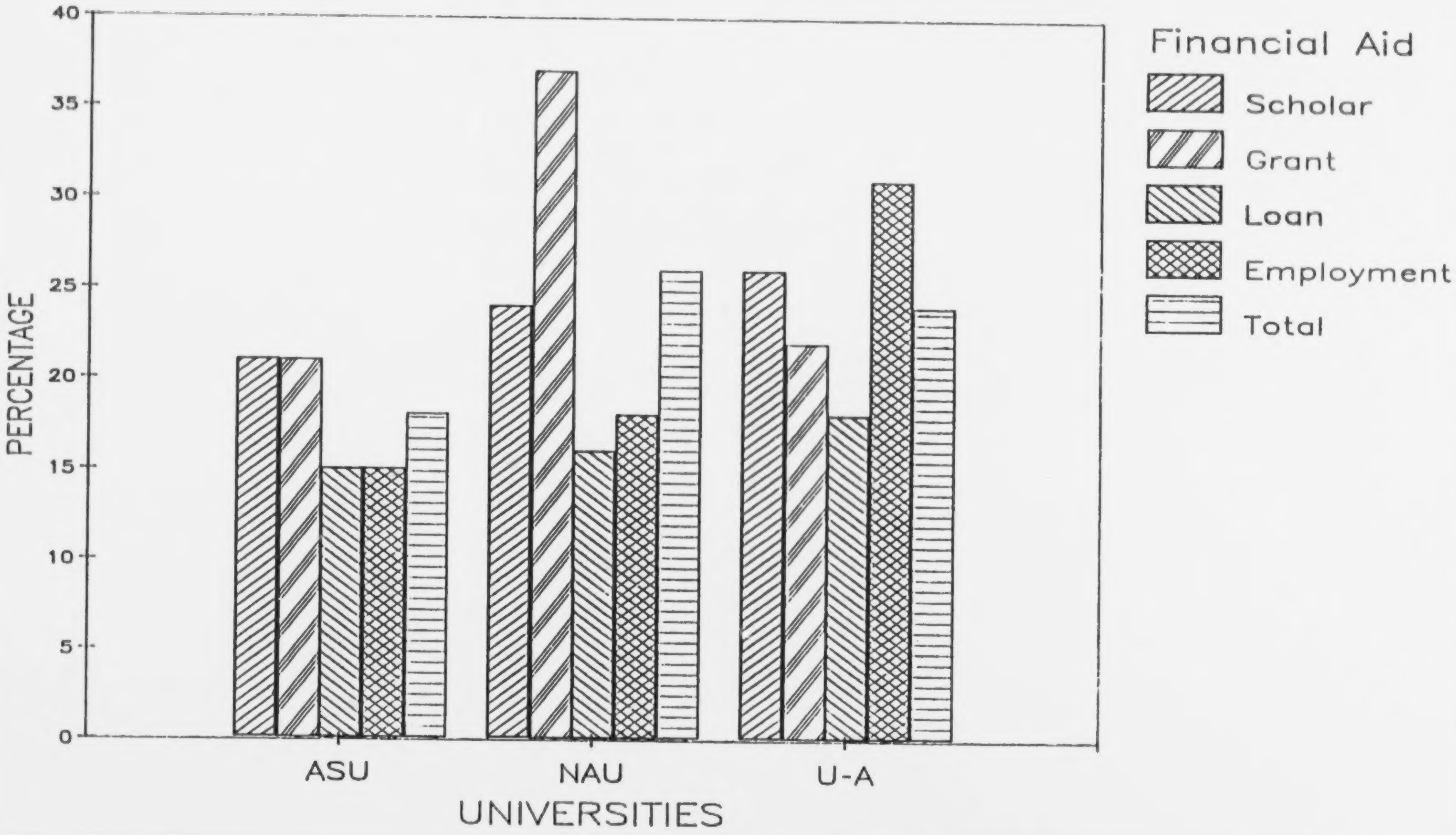
THE ARIZONA UNIVERSITIES
Student Financial Assistance
Total Awards By Ethnicity
Northern Arizona University

Typ	Year	Hisp	Black	Indian	Asian	Total Mnrty	Total Non-Mnrty	Grand Total
Sch	84-85	181	91	851	30	1159	2141	3300
	%	5	3	26	1	35	65	
	85-86	254	113	269	33	669	3174	3843
	%	7	3	7	1	17	83	
	86-87	448	287	656	59	1450	4867	6317
	%	7	5	10	1	23	77	
Grn	84-85	410	88	631	33	1162	2463	3625
	%	11	2	17	1	32	68	
	85-86	657	330	1505	50	2542	4411	6953
	%	9	5	22	1	37	63	
	86-87	509	179	1532	70	2290	3188	5478
	%	9	3	28	1	42	58	
Lon	84-85	223	71	110	28	432	2258	2690
	%	8	3	4	1	16	84	
	85-86	328	97	206	37	668	3323	3991
	%	8	2	5	1	17	83	
	86-87	453	137	245	69	904	4650	5554
	%	8	2	4	1	16	84	
Emp	84-85	97	20	63	4	184	486	670
	%	14	3	9	1	27	73	
	85-86	258	63	144	35	500	2559	3059
	%	8	2	5	1	16	84	
	86-87	324	93	232	61	710	3336	4046
	%	8	2	6	2	18	82	
Tot	84-85	917	270	1655	95	2937	7348	10285
	%	9	3	16	1	29	71	
	85-86	1497	603	2124	155	4379	13467	17846
	%	8	3	12	1	25	75	
	86-87	1734	696	2665	259	5354	16041	21395
	%	8	3	12	1	25	75	
Und	84-85	423	139	837	56	1455	4195	5650
	%	7	2	15	1	25	75	
	85-86	508	157	724	55	1444	5303	6747
	%	8	2	11	1	21	79	
	86-87	495	156	810	76	1537	5609	7146
	%	7	2	11	1	22	78	

THE ARIZONA UNIVERSITIES
Student Financial Assistance
Total Awards By Ethnicity
University of Arizona

Typ	Year	Hisp	Black	Indian	Asian	Total Mnrty	Total Non-Mnrty	Grand Total
Sch	84-85	376	163	184	93	816	2090	2906
	%	13	6	6	3	28	72	
	85-86							
	%							
	86-87	397	112	173	110	792	2437	3229
	%	12	4	5	4	25	75	
Grn	84-85	748	136	151	167	1202	2368	6570
	%	11	2	2	3	18	82	
	85-86							
	%							
	86-87	708	138	91	104	1141	2867	4008
	%	18	3	2	3	28	72	
Lon	84-85	648	187	54	198	1087	4949	6036
	%	11	3	1	3	18	82	
	85-86							
	%							
	86-87	642	204	61	193	1100	5024	6124
	%	10	3	1	3	18	82	
Emp	84-85	176	19	7	27	229	472	701
	%	25	3	1	4	33	67	
	85-86							
	%							
	86-87	66	19	8	12	105	263	368
	%	18	5	2	3	29	71	
Tot	84-85	1948	505	396	485	3334	9879	13213
	%	15	4	3	4	25	75	
	85-86							
	%							
	86-87	1813	473	373	479	3138	10591	13729
	%	13	3	3	3	23	77	
Wav	84-85	200	92	10	76	378	1433	1811
	%	11	5	1	4	21	79	
	85-86							
	%							
	86-87	278	109	43	150	580	2286	2866
	%	10	4	2	5	20	80	

THE ARIZONA UNIVERSITIES
Ethnic Student Financial Assistance
Three Year Mean
84/85 - 86/87



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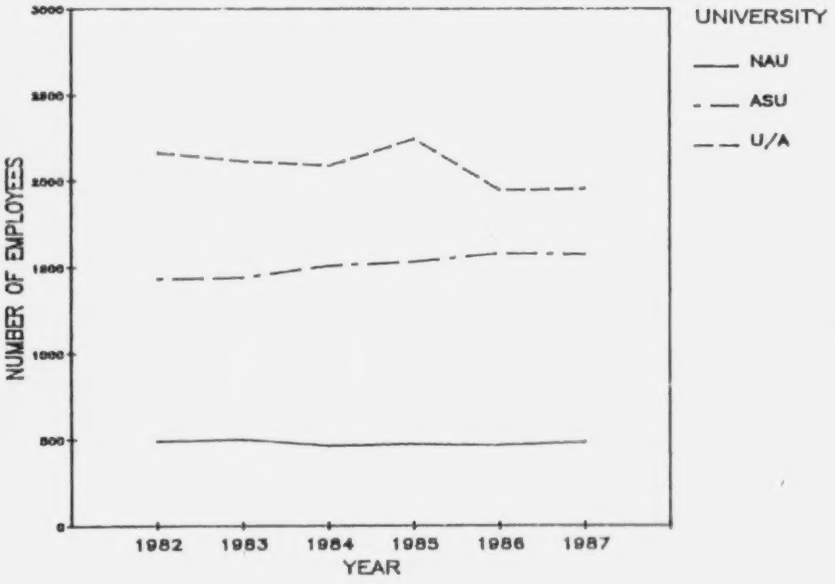
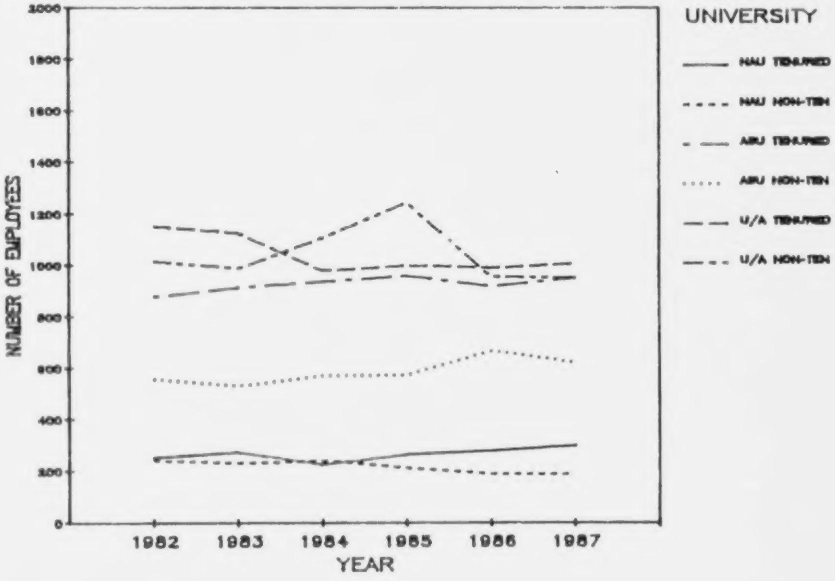
THE ARIZONA UNIVERSITIES
FACULTY BY ETHNIC DISTRIBUTION AND TENURE STATUS

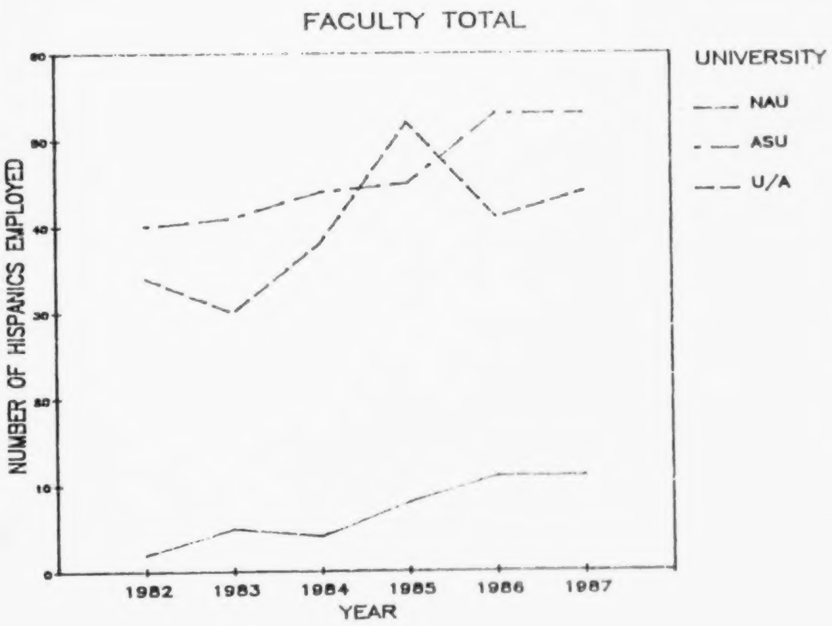
IV.	STATUS	ETHNIC GROUP	1982	1983	1984	1985	1986	1987
NAU	TENURED	HISPANIC	0	1	0	2	4	2
		BLACK	1	2	1	1	1	1
		NATIVE AMER.	2	2	1	1	1	1
		ASIAN	2	2	1	1	1	1
		TOTAL	252	273	222	264	278	298
ASU	TENURED	HISPANIC	19	19	24	27	24	27
		BLACK	5	7	10	10	8	10
		NATIVE AMER.	3	6	6	5	5	4
		ASIAN	25	28	30	32	32	34
		TOTAL	877	914	937	960	916	953
U/A	TENURED	HISPANIC	19	16	15	18	16	18
		BLACK	2	2	2	4	4	5
		NATIVE AMER.	2	3	3	4	4	7
		ASIAN	34	36	29	33	33	34
		TOTAL	1150	1124	978	1000	989	1007
NAU	NON-TENURED	HISPANIC	1	1	1	4	3	4
		BLACK	0	0	0	1	1	1
		NATIVE AMER.	1	0	2	3	3	4
		ASIAN	2	4	2	2	1	2
		TOTAL	179	141	147	142	111	90
ASU	NON-TENURED	HISPANIC	14	15	13	14	13	15
		BLACK	8	8	5	4	4	10
		NATIVE AMER.	3	3	2	2	2	6
		ASIAN	13	14	15	20	20	27
		TOTAL	293	300	275	292	257	301
U/A	NON-TENURED	HISPANIC	7	7	11	15	14	18
		BLACK	0	0	2	2	2	3
		NATIVE AMER.	4	2	1	2	2	3
		ASIAN	17	14	27	21	15	17
		TOTAL	316	299	552	406	404	444
NAU	NOT TENURE TRACK	HISPANIC	1	3	3	2	4	5
		BLACK	1	1	0	0	0	1
		NATIVE AMER.	0	0	2	2	2	1
		ASIAN	1	2	1	3	3	2
		TOTAL	60	87	92	67	75	95
ASU	NOT TENURE TRACK	HISPANIC	7	7	7	4	16	11
		BLACK	4	4	6	8	9	2
		NATIVE AMER.	3	1	1	0	2	1
		ASIAN	8	17	19	21	43	36
		TOTAL	262	228	297	281	410	319
U/A	NOT TENURE TRACK	HISPANIC	8	7	12	19	11	8
		BLACK	7	8	6	5	5	4
		NATIVE AMER.	1	0	4	4	4	3
		ASIAN	7	9	5	13	11	6
		TOTAL	697	687	555	838	551	505
NAU	FACULTY TOTAL	HISPANIC	2	5	4	8	11	11
		BLACK	2	3	1	2	2	3
		NATIVE AMER.	3	2	5	6	6	6
		ASIAN	5	8	4	6	5	5
		TOTAL	491	501	461	473	464	483
ASU	FACULTY TOTAL	HISPANIC	40	41	44	45	53	53
		BLACK	17	19	21	22	21	22
		NATIVE AMER.	9	10	9	7	9	11
		ASIAN	46	59	64	73	95	97
		TOTAL	1432	1442	1509	1533	1583	1573
U/A	FACULTY TOTAL	HISPANIC	34	30	38	52	41	44
		BLACK	9	10	10	11	11	12
		NATIVE AMER.	7	5	8	10	10	13
		ASIAN	58	59	61	67	59	57
		TOTAL	2163	2110	2085	2244	1944	1956

COMPARISON OF TOTAL FACULTY WORK FORCE

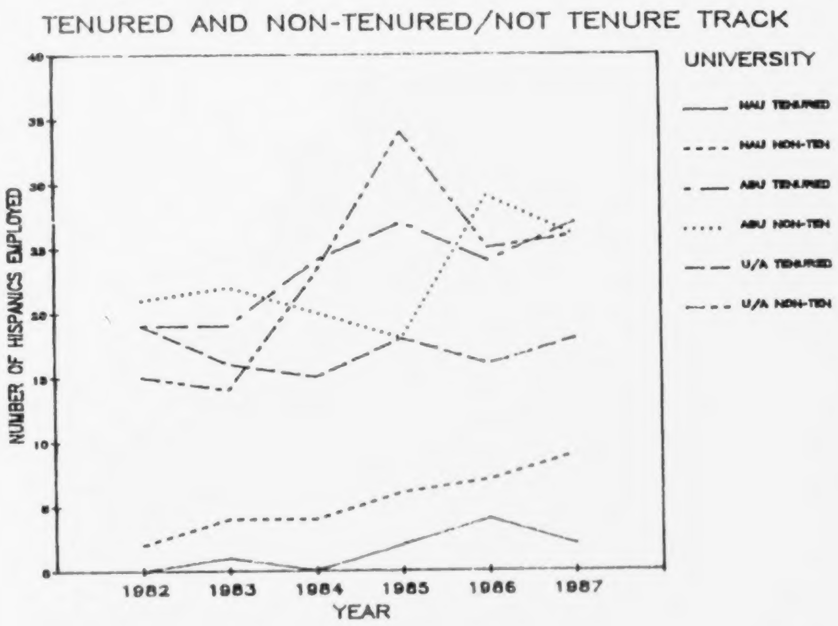

FACULTY TOTAL


TENURED AND NON-TENURED/NOT TENURE TRACK

COMPARISON OF HISPANIC FACULTY

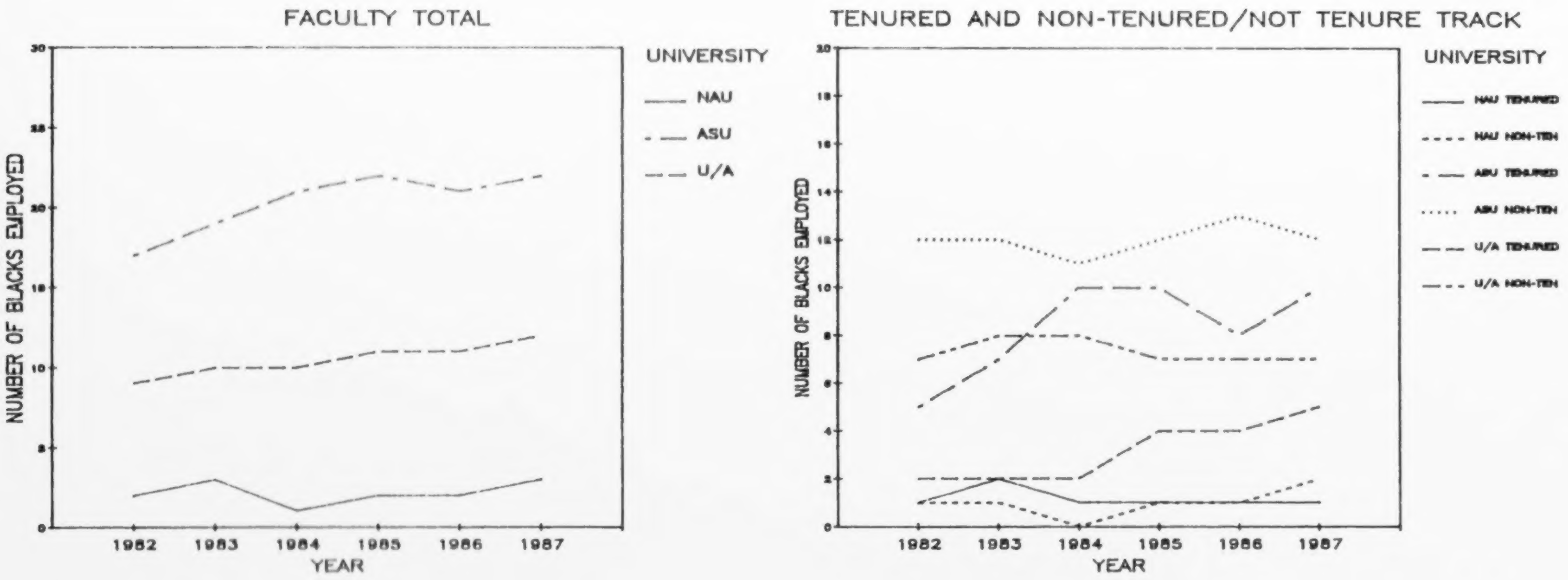


FACULTY TOTAL



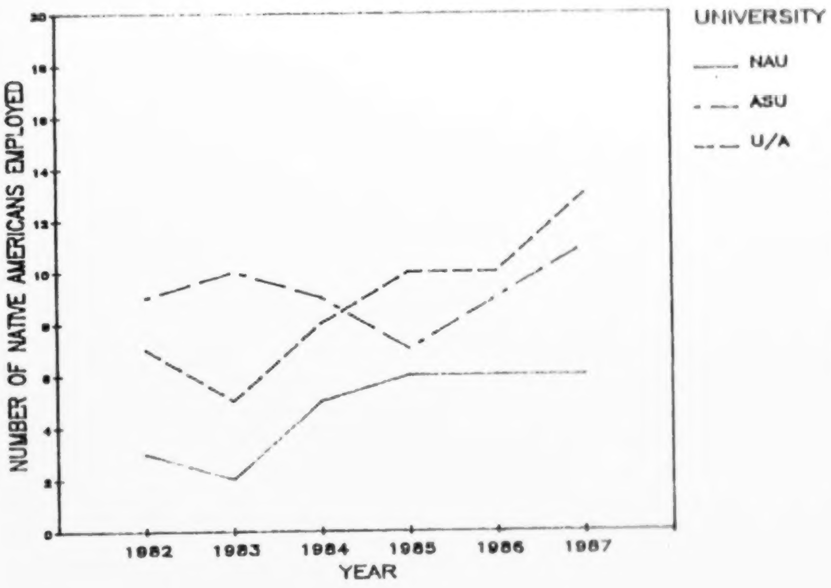
TENURED AND NON-TENURED/NOT TENURE TRACK

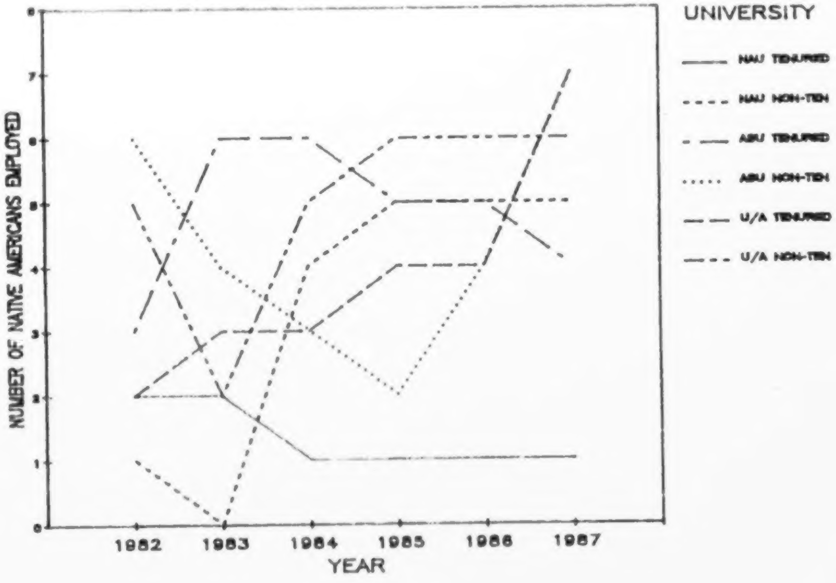
COMPARISON OF BLACK FACULTY


FACULTY TOTAL

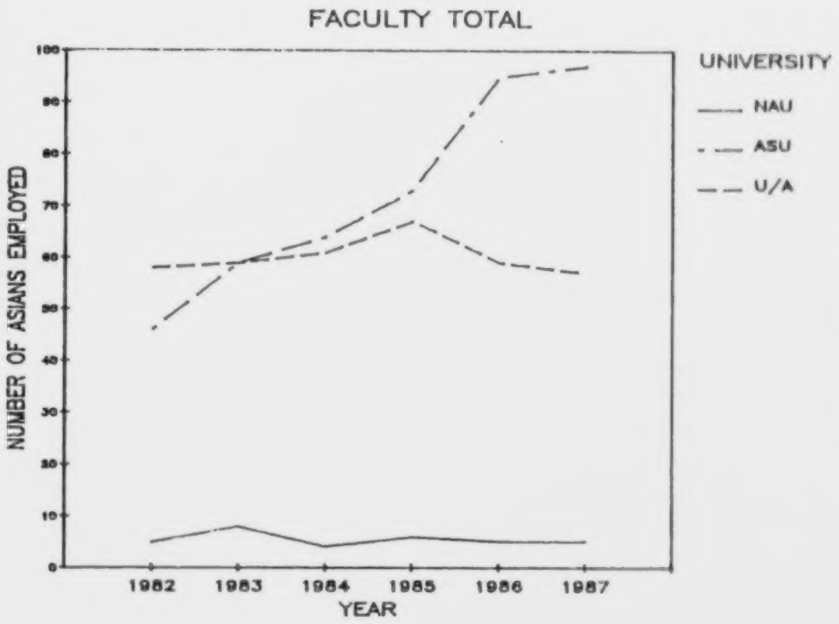
TENURED AND NON-TENURED/NOT TENURE TRACK

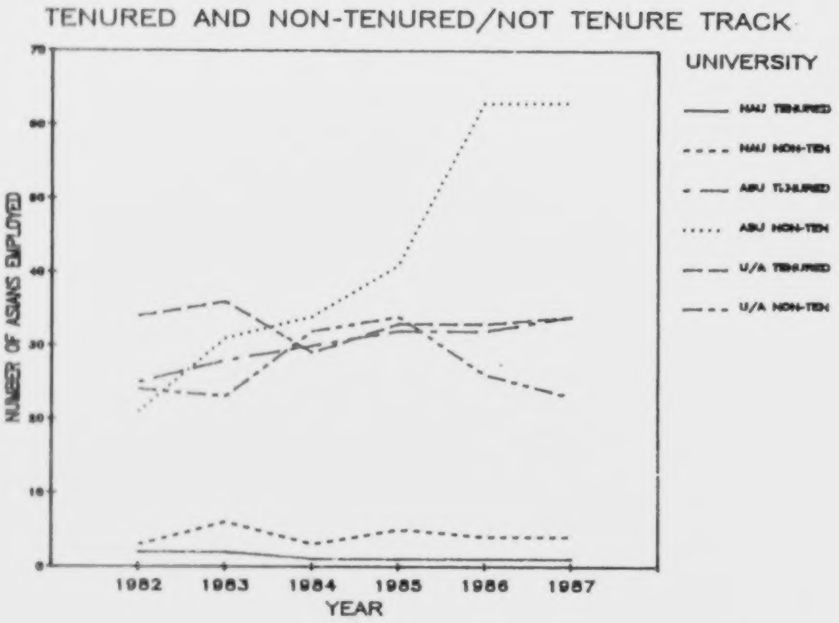
COMPARISON OF NATIVE AMERICAN FACULTY


FACULTY TOTAL


TENURED AND NON-TENURED/NOT TENURE TRACK

COMPARISON OF ASIAN FACULTY





THE ARIZONA UNIVERSITIES
New Undergraduate Students
Withdrawals, Persistence*, Graduation and Summary

Arizona State University
Students Entering Fall 1981

		% Persis/Grad By Year					Summary End of 5th Year			
							Withdrawals			
Entry Group	#	1st	2nd	3rd	4th	5th	Acad	Vol	Pers ***	Grad
New Fresh**	3513						17	29	19	35
Persistence		100	72	62	56	37				
Graduation				1	17	35				
Fresh Trnsf	712						20	32	12	36
Persistence		100	64	55	39	20				
Graduation				12	27	36				
Soph Trnsf	1907						19	26	7	49
Persistence		100	70	52	25	11				
Graduation			11	33	44	49				
Jr Trnsf	1337						13	31	6	50
Persistence		100	67	43	17	9				
Graduation		2	18	40	47	50				
Sen Trnsf	223						11	29	4	57
Persistence		100	58	30	16	7				
Graduation		13	36	48	54	57				
Post Bacc	166						7	60	4	29
Persistence		100	51	25	8	4				
Graduation		4	13	25	28	29				
Unclass	749						23	60	8	9
Persistence		100	28	20	15	10				
Graduation			1	3	6	9				

* Students who were enrolled in the fall and/or spring semesters of the specified years.

** New freshman entering with less than 12 transfer hours.

*** Students enrolled in the fall and/or spring semesters of the fifth year, but did not graduate in the fifth year.

THE ARIZONA UNIVERSITIES
New Undergraduate Students
Withdrawals, Persistence*, Graduation and Summary

Northern Arizona University
Students Entering Fall 1984

		% Pers/Grad By Year				Summary End of 4th Year			
						Withdrawals			
Entry Group	#	1st	2nd	3rd	4th	Acad	Vol	Pers***	Grad
New Fresh**	1158					9	53	37	0
Persistence		100	62	45	37				
Graduation		0	0	0	0				
Fresh Trnsf	404					7	53	34	5
Persistence		100	59	45	34				
Graduation		0	0	5	5				
Soph Trnsf	347					5	45	22	29
Persistence		100	69	54	22				
Graduation		0	4	29	29				
Jr Trnsf	258					8	34	11	46
Persistence		100	72	39	11				
Graduation		1	23	46	46				
Sen Trnsf	49					10	45	6	39
Persistence		100	49	24	6				
Graduation		8	27	39	39				
Unclass	5					20	60	0	20
Persistence		100	20	20	0				
Graduation		0	0	20	20				

* Students who were enrolled in the fall and/or spring semesters of the specified years.

** New freshman entering with less than 12 transfer hours.

*** Students enrolled in the fall and/or spring semesters of the fifth year, but did not graduate in the fifth year.

THE ARIZONA COMMUNITY COLLEGES

THE ARIZONA COMMUNITY COLLEGES

Enrollment by Ethnicity - Totals
Fall 1984 - Spring 1987

Full Time Student Enrollment
From Fall to Spring Semesters by County

Student Credit Hours Enrolled
From Fall to Spring Semesters

Enrollment by Ethnic Background by County

Academic Degrees by County
June 1985 - June 1987

Headcount Enrollment by Age Distribution

THE ARIZONA COMMUNITY COLLEGES

Enrollment by Ethnicity - Totals
Fall 1984 - Spring 1987

Full Time Student Enrollment
From Fall to Spring Semesters by County

Student Credit Hours Enrolled
From Fall to Spring Semesters

Enrollment by Ethnic Background by County

Academic Degrees by County
June 1985 - June 1987

Headcount Enrollment by Age Distribution

THE ARIZONA COMMUNITY COLLEGES
Enrollment By Ethnicity
Fall 1984 - Spring 1987

Semester	Indian	Asian	Black	Hisp.	Total Minority	Total Non Minority	Grand Total
Fall 84	3577	1818	4004	12643	22042	85367	107409
%	16	9	18	57	21	79	
Sprg 85	4314	1898	4152	12495	22859	87447	110306
%	19	8	18	55	21	79	
Fall 85	4007	1918	3767	13498	23190	89373	112563
%	17	8	17	58	20	80	
Sprg 86	4460	2014	3709	13269	23452	94171	117623
%	19	8	16	57	20	80	
Fall 86	4301	2238	4030	14797	25366	95555	120921
%	17	9	16	58	21	79	
Sprg 87	4691	2341	3977	14584	25593	98871	124464
%	18	9	16	57	21	79	
Mean	4225	2038	3940	13548	23750	91797	115548
Standard Deviation	388	207	168	963	1423	5214	6562

THE ARIZONA COMMUNITY COLLEGES
Full Time Student Enrollment
Fall 1984 - Spring 1986

	Fall 1984-1986			Spring 1984-1986			
County	Number	Total	% Total	Number	Total	% Total	% Change
Cochise	3518	12808	28	3727	13022	29	+ 1
Graham	3253	11080	29	3135	11806	27	- 2
Maricopa:	41346	201078	21	37090	199094	19	- 2
Gateway	2005	8746	23	1927	9384	21	- 2
Glendale	10221	41699	25	8958	41101	22	- 3
Mesa	8608	49948	17	11553	49532	23	+ 6
Phoenix	8668	35861	26	7616	35269	22	- 4
Rio Salado	629	36196	2	622	35086	2	0
Scottsdale	6148	23759	26	5470	23887	23	- 3
S Mountain	1067	4869	22	944	4835	20	- 2
Mohave	937	10145	9	925	10883	8	- 1
Navajo	1165	15433	8	1342	17623	7	- 1
Pima	13983	62856	22	13217	63740	21	- 1
Pinal	2570	12496	21	2389	14670	16	- 5
Yavapai	2146	15916	13	2163	17210	13	0
Yuma/La Paz	3073	11800	26	2613	16052	16	- 10

THE ARIZONA COMMUNITY COLLEGES
Student Credit Hours Enrolled
Fall 1984 - Spring 1986

	Fall 1984-1986			Spring 1984-1986			
County	Number	Total	% Total	Number	Total	% Total	% Change
Cochise	56649	100004	57	55942	102917	54	- 3
Graham	44526	76668	58	44353	76429	58	0
Maricopa:	831173	1247749	67	773953	1175065	66	- 1
Gateway	13233	51921	25	12573	62173	20	- 5
Glendale	200171	278934	72	184359	258101	71	- 1
Mesa	253252	352624	72	235912	336023	70	- 2
Phoenix	159043	247473	64	148913	231981	64	0
Rio Salado	55702	121751	46	54344	115163	47	+ 1
Scottsdale	126745	165829	76	116961	156508	75	- 1
S Mountain	23022	29184	79	20890	27686	75	- 4
Mohave	38235	60985	63	39077	62973	62	- 1
Navajo	41509	68319	61	47550	78069	61	0
Pima	291832	436085	67	282224	426552	66	- 1
Pinal	48764	77346	63	53086	78904	67	+ 4
Yavapai	51080	76988	66	51699	77094	67	+ 1
Yuma/La Paz	63157	88020	72	61465	85562	72	0

THE ARIZONA COMMUNITY COLLEGES
Enrollment by Ethnic Background
Fall 1984 - Spring 1987

County	Fall Sprg Year	Indian	Asian	Black	Hisp	Total Mnrty	Grand Total	% Mntry of Total
Cochise	F	180	399	684	2410	3673	12808	29
	S	191	458	786	2440	3875	13022	30
	Y	371	1228	1470	4850	7548	25830	29
	Y %	5	11	19	65			
Graham	F	768	172	289	1816	3045	11080	27
	S	805	170	265	1842	3082	11806	26
	Y	1573	342	554	3658	6127	22886	27
	Y %	26	6	9	59			
Maricopa:	F	3630	3378	7579	17993	32580	201078	16
	S	3820	3463	7609	17579	32471	199094	16
	Y	7450	6841	15188	35572	65051	400172	16
	Y %	11	11	23	55			
Gateway	F	379	194	883	1288	2744	8746	31
	S	460	217	883	1383	2943	9384	31
	Y	839	411	1766	2671	5687	18130	31
	Y %	15	7	31	47			
Glendale	F	293	1227	1022	3561	6103	41699	15
	S	325	939	1066	3392	5722	41101	14
	Y	618	2166	2088	6953	11825	82800	14
	Y %	5	18	18	59			
Mesa	F	848	1067	1261	4110	7286	47013	15
	S	844	1060	1259	2944	7107	49532	14
	Y	1692	2127	2520	8054	14393	96545	15
	Y %	12	15	17	56			
Phoenix	F	1011	713	1717	4008	7449	35861	21
	S	1002	707	1749	3850	7308	35269	21
	Y	2013	1420	3466	7858	14757	71130	21
	Y %	14	10	23	53			

Rio Salado	F	548	239	1043	3012	4842	36196	13
	S	589	283	1119	3013	5004	35086	14
	Y	1137	522	2162	6025	9846	71282	14
	Y %	12	5	22	61			
Scottsdale	F	460	197	292	571	1520	23759	6
	S	492	217	238	542	1489	23887	6
	Y	952	414	530	1113	3009	47646	6
	Y %	32	14	18	36			
S Mountain	F	91	34	1361	1443	2929	4869	60
	S	108	40	1395	1455	2998	4835	62
	Y	199	74	2756	2898	5927	9704	61
	Y %	3	1	47	49			
Mohave	F	215	36	15	236	502	10145	5
	S	221	42	13	219	495	10883	5
	Y	436	78	28	455	997	21028	5
	Y %	44	8	3	45			
Navajo	F	3516	63	91	907	4577	15433	30
	S	4444	56	108	1087	5695	17623	32
	Y	7960	119	199	1994	10272	33056	31
	Y %	78	1	2	19			
Pima	F	1302	1719	2270	11500	16791	62856	27
	S	1412	1833	2277	11478	17000	63740	27
	Y	2714	3552	4547	22978	33791	126596	27
	Y %	8	11	13	68			
Pinal	F	986	70	393	2334	3783	12496	30
	S	1098	60	392	2071	3621	14670	25
	Y	2084	130	785	4405	7404	27166	27
	Y %	28	2	11	59			
Yavapai	F	959	59	66	508	1592	15916	10
	S	1190	94	76	587	1947	17220	11
	Y	2149	153	142	1095	3539	33136	11
	Y %	61	4	4	31			
Yuma/La Paz	F	329	78	414	3234	4055	11800	34
	S	284	77	336	3045	3742	16052	23
	Y	613	155	750	6279	7797	27852	28
	Y %	8	2	10	80			

THE ARIZONA COMMUNITY COLLEGES
Academic Degrees
June 1985 - June 1987

County	Number of Academic Degrees	% of Total Degrees	Total Degrees
Cochise	377	48	788
Graham	394	71	553
Maricopa:	4362	52	8308
Gateway	34	6	592
Glendale	1214	37	3289
Mesa	1286	55	2352
Phoenix	1004	49	2053
Rio Salado	190	74	255
Scottsdale	543	62	873
S Mountain	91	84	108
Mohave	76	50	153
Navajo	90	49	184
Pima	1147	42	2715
Pinal	264	54	486
Yavapai	210	46	461
Yuma/La Paz	251	41	610

THE ARIZONA COMMUNITY COLLEGES
Headcount Enrollment by Age Distribution
Fall 1984 - Spring 1987

Age Group	Fall 84	Spring 85	Fall 85	Spring 86	Fall 86	Spring 87	Fall TOTAL	Spring TOTAL
< 20	18713	16216	19378	17333	21701	18927	59792	52476
%	17	14	17	14	17	15	17	14
20-24	26457	26788	26821	27596	28012	28898	81290	83282
%	24	23	23	23	22	22	23	23
25-29	18959	18942	18957	19541	19848	20172	57764	58655
%	17	17	16	16	16	15	16	16
30-39	24174	24870	26228	26985	28643	29679	79045	81534
%	22	22	23	23	23	23	22	22
40-49	11605	12172	12482	13441	14303	15173	38390	40786
%	10	11	11	11	11	12	11	11
50-59	4874	5596	5457	6063	6248	6776	16579	18435
%	4	5	5	5	5	5	5	5
60+	4517	6980	5188	7983	5767	8666	15472	23629
%	4	6	4	7	5	7	4	6
Undec	2057	1971	1389	1612	1834	1730	5280	5313
%	2	2	1	1	1	1	1	1
TOTAL	111356	113535	115900	120554	126356	130021	353612	364110

THE ARIZONA DEPARTMENT OF EDUCATION

THE ARIZONA DEPARTMENT OF EDUCATION

Language Census and Program Report
Primary Home Language

Percentile Rank in Reading Comprehension

Reading Comprehension Subtest Results
by Primary Home Language

Limited English Proficient (LEP) Programs

Summary of Participation by School Districts

Standardized Test Scores
Iowa Tests of Basic Skills Grades 6 - 8
Stanford Achievement Test Grades 9 - 12

THE ARIZONA DEPARTMENT OF EDUCATION
Language Census and Program Report
Primary Home Language
State Totals K-12
1985 - 1986

ARS 15-751-756

Language	Number	Percent
English	501,165	83.8
Spanish	71,045	11.9
Indian	19,276	3.1
Navaho	(14,948)	(2.5)
Apache	(2,118)	(0.4)
Other	(2,210)	(0.4)
Other	6,345	1.1
TOTAL	597,831	100.1

Arizona Pupil Achievement Testing Results
June 1986
Percentile Rank in Reading Comprehension
of
White, Hispanic, and American Indian Students

Grade	Percentile Rank of National Norm	Percentile Rank Arizona			Arizona Relation to National Norm		
		White	Hispanic	American Indian	White	Hispanic	American Indian
First	49	55	34	28	+6	-15	-21
Second	46	65	39	31	+19	-7	-15
Third	46	62	40	31	+16	-6	-15
Fourth	45	57	35	29	+12	-10	-16
Fifth	45	56	36	31	+11	-9	-14
Sixth	43	54	33	26	+11	-10	-17
Seventh	43	49	29	23	+6	-14	-20
Eighth	42	50	31	24	+8	-11	-18
Ninth	51	69	44	32	+18	-7	-19
Tenth	48	62	38	26	+14	-10	-22
Eleventh	48	62	34	22	+14	-14	-26
Twelfth	45	61	34	23	+16	-11	-22

NB: The above data does not include the 4,675 students who were exempted from the statewide testing program due to their degree of limited English proficiency.

SPRING 1987
ARIZONA STATE ACHIEVEMENT TEST
IOWA TEST OF BASIC SKILLS
READING COMPREHENSION SUBTEST RESULTS
BY
PRIMARY HOME LANGUAGE

	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		TOTAL	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total Students Tested	49,449	100	44,987	100	43,118	100	42,490	100	40,087	100	39,871	100	39,761	100	39,367	100	339,224	100
Total English Home Language Students Tested	40,781	82	38,305	85	36,134	84	35,144	83	33,669	84	33,722	85	33,365	84	33,412	85	284,532	84
Total Non-English Home Language Students Tested	4,860	10	4,872	11	4,828	11	5,284	12	4,681	12	4,383	11	4,081	10	4,024	10	37,103	11
Total Unknown Home Language Students Tested	3,808	8	1,810	4	2,160	5	2,062	5	1,737	4	1,766	4	2,315	6	1,931	5	17,589	5
Total Non-English Home Language Students Scoring At or Below the 40th Percentile	3,465	75	3,463	71	3,319	69	3,569	68	3,039	65	3,142	72	2,981	73	2,953	73	25,931	70

SPRING 1987
ARIZONA STATE ACHIEVEMENT TEST
STANFORD ACHIEVEMENT TEST
READING COMPREHENSION SUBTEST RESULTS
BY
PRIMARY HOME LANGUAGE

	Grade 9		Grade 10		Grade 11		Grade 12		TOTAL	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Students Tested	39,940	100	38,779	100	34,866	100	30,020	100	143,605	100
Total English Home Language Students Tested	33,076	83	32,783	85	29,563	85	25,441	85	120,863	84
Total Non-English Home Language Students Tested	3,666	9	3,059	8	2,481	7	2,410	8	11,616	8
Total Unknown Home Language Students Tested	3,198	8	2,937	7	2,822	8	2,169	7	11,126	8
Total Non-English Home Language Students Scoring At or Below the 40th National Percentile	2,420	66	2,030	66	1,784	72	1,639	68	7,873	68

THE ARIZONA DEPARTMENT OF EDUCATION
LIMITED ENGLISH PROFICIENT (LEP) PROGRAMS

School districts are required to implement program services for LEP students from program options allowed under ARS 15-754. A school district may meet this requirements by implementing any of the following program options:

1. K-6 Transitional Bilingual Program - instruction in and through English and the primary home language of students.

2. 7-12 Secondary Bilingual Program - use of the pupil's primary home language for instruction in the elective and non-elective content courses required for graduation.

3. K-12 Bilingual-Bicultural Program - to achieve competency and literacy in both languages.

4. English as a Second Language Program (ESL) - daily instruction in English language development including: listening and speaking; reading and writing; cognitive and academic; and understanding of the history and culture of the United States and the values of the cultures associated with the primary home language.

5. Individual Education Program - a systematic, individualized program of instruction using the pupil's primary home language for subject matter instruction.

The following program options were offered by school districts during the 1985-1986 school year:

Program Options	Number of School Dists.	Number of Participants
K-6 Transitional Bilingual Program	26	14,550
7-12 Secondary Bilingual Program	11	4,205
K-12 Bilingual-Bicultural Program	6	903
English as a Second Language Program	93	19,159
Individual Education Program	54	1,395

THE ARIZONA DEPARTMENT OF EDUCATION
Summary of Participation by School Districts In Limited English Proficient Programs
1985 - 1986

ARS 15-754

Districts With Programs Not Implemented (PNI)
Districts With No Eligible Students (NES)
Total Number of Districts in County (T)

County	(PNI)-(NES)/(T)	Percent
Apache	4 - 1 / 10	33.3
Cochise	9 - 1 / 22	36.4
Coconino	3 - 1 / 8	25.0
Gila	3 - 2 / 8	12.5
Graham	1 - 0 / 7	14.3
Greenlee	5 - 1 / 6	66.6
Maricopa	11 - 2 / 57	15.8
Mohave	9 - 6 / 14	21.4
Navaho	2 - 1 / 10	10.0
Pima	3 - 2 / 15	6.7
Pinal	4 - 0 / 20	20.0
Santa Cruz	2 - 0 / 6	33.3
Yavapai	8 - 4 / 18	22.2
Yuma	0 - 0 / 9	0.0
La Paz	1 - 1 / 6	0.0
TOTAL	65 - 22 /216	19.9

DISTRICT REPORT OF AVERAGES

Iowa Tests of Basic Skills

System
Norms SPRING
Order No 000-000096 ==

Grade 3
Test Date . .
Page 3

		LISTENING	WORD ANALYSIS	VOCABULARY	READING	LANGUAGE SKILLS					WORK-STUDY SKILLS			MATHEMATICS SKILLS				COMPOSITES		SOCIAL STUDIES	SCIEN
		LI	WA	V	R	SPELLING L-1	CAPITALIZATION L-2	PUNCTUATION L-3	USAGE L-4	TOTAL L	VISUAL MATERIAL W-1	REFERENCES W-2	TOTAL W	CONCEPTS M-1	PROBLEMS M-2	COMPUTATION M-3	TOTAL M	BASIC	COMPLETE	SS	SC
SCHOOL A	N			92	92	91	88	89	89	87	92	92	92	93	93	92	92	90	87		
	AVERAGE GRADE EQUIVALENT			38.1	39.1	36.6	40.1	43.5	42.3	40.7	38.8	35.5	37.2	37.1	36.4	34.6	36.0	37.6	38.4		
	PR OF MEAN GE:																				
	PUPIL NORMS			49	53	45	54	59	56	55	51	42	48	44	45	34	43	48	51		
	SCHOOL NORMS			44	48	32	54	69	59	55	50	30	41	33	35	14	30	39	46		
	AVERAGE NATIONAL STANINE			5.0	5.1	4.6	5.1	5.4	5.3	5.2	5.1	4.6	4.9	4.7	4.8	4.2	4.6	4.8	5.0		
	AVERAGE STANDARD SCORE			107.3	108.4	104.9	110.0	113.9	112.3	110.4	108.2	104.2	106.2	106.2	105.2	103.4	104.9	106.6	107.8		
	AVERAGE NORMAL CURVE EQUIV			49.4	50.7	45.8	51.4	53.7	53.1	51.7	50.6	45.3	48.8	46.1	47.7	41.1	45.0	48.0	49.8		
	AVERAGE RAW SCORE			17.3	28.6	17.5	16.0	16.3	21.1		22.3	19.6		17.9	14.6	23.0					
	MEDIAN GRADE EQUIVALENT			38.8	38.1	35.6	37.4	42.4	42.7	40.4	38.7	36.8	38.8	37.4	36.8	34.3	36.3	37.8	38.8		
	MEDIAN STANDARD SCORE			108.8	108.1	104.6	106.4	113.4	113.7	110.4	108.7	106.8	108.8	107.4	106.8	103.3	105.3	107.8	108.8		
	STANDARD DEVIATION OF NCE			17.0	18.8	19.7	16.8	19.2	17.3	17.3	18.6	19.2	18.6	16.3	18.3	20.4	18.2	18.0	18.1		
SCHOOL B	N			138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138		
	AVERAGE GRADE EQUIVALENT			35.5	35.3	34.5	36.8	40.3	36.4	37.0	35.4	33.3	34.4	32.7	32.3	34.8	33.2	34.7	35.1		
	PR OF MEAN GE:																				
	PUPIL NORMS			40	42	38	44	52	44	44	41	35	39	29	32	35	31	38	39		
	SCHOOL NORMS			30	27	20	33	51	33	33	32	19	25	11	13	15	13	22	26		
	AVERAGE NATIONAL STANINE			4.5	4.5	4.3	4.6	5.0	4.6	4.6	4.6	4.2	4.5	3.9	4.1	4.3	4.0	4.3	4.3		
	AVERAGE STANDARD SCORE			104.1	103.1	102.1	105.4	109.6	104.7	105.4	103.6	101.4	102.6	100.1	99.7	103.8	101.0	102.7	103.4		
	AVERAGE NORMAL CURVE EQUIV			45.0	44.5	42.5	45.9	49.1	45.6	45.7	45.3	41.3	43.8	36.8	40.1	41.6	38.1	41.7	42.5		
	AVERAGE RAW SCORE			15.9	25.7	16.4	14.4	15.0	18.4		20.6	18.3		15.5	12.7	23.3					
	MEDIAN GRADE EQUIVALENT			34.5	35.3	33.3	34.9	39.0	36.1	36.5	34.2	34.1	35.0	33.0	33.7	34.1	33.3	34.2	35.9		
	MEDIAN STANDARD SCORE			103.0	104.3	101.3	103.9	109.0	105.1	105.0	103.2	103.1	104.0	101.0	101.7	103.1	101.3	102.2	104.9		
	STANDARD DEVIATION OF NCE			18.0	17.8	18.0	16.6	19.7	17.7	17.8	18.7	18.3	18.3	17.9	20.2	19.0	19.8	18.0	19.3		
SYSTEM AVERAGES	N			775	773	772	769	769	768	766	772	770	770	772	772	770	770	761	754		
	AVERAGE GRADE EQUIVALENT			39.0	39.1	38.6	40.5	44.3	41.5	41.3	39.7	36.6	38.2	36.0	35.4	36.4	35.9	38.2	38.7		
	PR OF MEAN GE:																				
	PUPIL NORMS			52	53	51	55	61	55	57	54	45	51	40	42	43	42	50	52		
	SCHOOL NORMS			48	48	46	56	74	55	59	55	37	47	26	28	29	29	42	48		
	AVERAGE NATIONAL STANINE			5.1	5.1	5.0	5.2	5.5	5.2	5.3	5.2	4.8	5.1	4.5	4.7	4.6	4.5	4.9	5.0		
	AVERAGE STANDARD SCORE			108.5	108.3	107.6	110.4	114.8	111.3	111.0	109.3	105.6	107.5	104.6	103.8	105.8	104.7	107.3	108.2		
	AVERAGE NORMAL CURVE EQUIV			50.9	50.6	49.2	51.8	54.6	52.1	52.7	51.9	47.2	50.5	43.7	45.9	45.6	44.8	49.1	50.4		
	AVERAGE RAW SCORE			17.8	28.5	18.6	16.1	16.7	20.7		22.7	20.4		17.3	14.3	24.6					
	MEDIAN GRADE EQUIVALENT			39.0	38.5	38.2	39.5	46.6	41.4	41.5	38.6	37.2	38.2	36.6	36.6	35.9	36.3	38.2	38.9		
	MEDIAN STANDARD SCORE			109.0	108.5	107.2	109.5	118.6	111.4	112.0	108.6	107.2	108.2	106.6	106.6	105.9	105.3	108.2	108.9		
	STANDARD DEVIATION OF NCE			17.5	18.7	18.2	18.0	19.9	17.6	17.7	19.2	19.1	18.8	17.4	19.9	19.9	19.1	18.0	18.7		

STANFORD AC.. .VEMENT TEST

SCHOOL PUEBLO HIGH SCHOOL
SYSTEM TUCSON UNIFIED DISTR
TEST DATE 04/20/87

GRADE 9
LEVEL ADVANCED FORM E
STANFORD NORMS GR 09.8

ARIZONA
PUPIL ACHIEVEMENT
TESTING

ANALYSIS OF VARIABLES SCHOOL REPORT
COPY 2
PAGE 1

	READING COMP.	VOCAB.	LISTENING COMP.	SPELLING	LANGUAGE	CONCEPTS OF NO.	MATH COMP.	MATH APP.	TOTAL LANGUAGE	TOTAL LISTENING	TOTAL MATH.	BASIC BATTERY
SEX												
MALE N-COUNT=	206	196	190	206	207	209	213	180	206	178	171	152
MEAN RAW SCORE	35.7	24.0	25.2	30.2	34.7	19.4	22.7	20.6	64.8	49.5	64.2	218.7
MEAN SCALED SCORE	667.3	674.3	660.2	675.9	661.5	681.0	681.3	677.4	667.4	667.9	682.2	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	30-4	25-4	19-3	11-3	15-3	8-2	10-2	14-3	12-3	22-3	17-3	NA[1]
G.E. OF THE MEAN SCALED SCORE	7.6	7.6	6.7	7.2	6.6	8.0	7.9	8.0	6.8	7.2	8.2	NA[1]
MEAN NCE AND STANDARD DEVIATION	43.0/17.1	37.3/16.2	37.1/15.8	37.3/18.3	38.0/15.4	38.4/19.5	37.9/19.6	39.5/18.6	36.3/16.3	37.2/15.5	39.5/16.6	40.2/13.5
FEMALE N-COUNT=	233	216	200	233	233	232	234	207	233	190	197	169
MEAN RAW SCORE	37.5	22.3	24.7	33.6	36.5	18.7	24.5	19.6	70.1	47.1	64.1	221.5
MEAN SCALED SCORE	673.2	665.4	657.9	691.5	668.0	677.1	690.2	673.4	677.7	662.0	682.3	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	40-5	12-3	16-3	35-4	22-3	5-2	20-3	10-2	28-4	13-3	17-3	NA[1]
G.E. OF THE MEAN SCALED SCORE	8.2	6.9	6.5	8.5	7.2	7.8	8.6	7.7	7.7	6.7	8.2	NA[1]
MEAN NCE AND STANDARD DEVIATION	45.8/17.5	32.8/16.0	35.6/16.6	44.1/18.6	41.3/15.4	36.2/19.2	41.9/17.6	37.2/19.0	41.6/16.8	33.7/15.8	39.6/16.1	40.6/14.1
UNKNOWN N-COUNT=	3	1	1	3	3	3	3	1	3	1	1	1
MEAN RAW SCORE	36.3	33.0	35.0	36.0	42.3	17.7	25.0	33.0	78.3	68.0	90.0	306.0
MEAN SCALED SCORE	669.3	721.0	716.0	701.3	686.7	670.7	691.0	735.0	693.0	718.0	721.0	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	36-4	95-8	98-9	52-5	57-5	10-2	32-4	93-8	60-6	96-9	79-7	NA[1]
G.E. OF THE MEAN SCALED SCORE	7.8	12.2	PHS	9.3	9.5	7.5	8.6	PHS	9.2	PHS	11.5	NA[1]
MEAN NCE AND STANDARD DEVIATION	44.0/19.9	59.9/ 0.0	69.3/ 0.0	48.6/19.5	50.5/16.3	33.5/20.2	42.8/ 9.9	67.0/ 0.0	49.6/20.1	64.9/ 0.0	58.1/ 0.0	66.0/ 0.0
PRIMARY LANGUAGE												
ENGLISH N-COUNT=	295	269	254	295	295	296	296	253	295	244	246	216
MEAN RAW SCORE	38.4	24.6	25.8	33.3	37.0	19.6	24.2	20.9	70.3	50.5	66.0	226.6
MEAN SCALED SCORE	676.3	677.3	663.2	689.9	668.9	682.0	688.8	678.3	677.5	670.1	685.1	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	46-5	31-4	25-4	31-4	23-4	9-2	19-3	15-3	26-4	26-4	21-3	NA[1]
G.E. OF THE MEAN SCALED SCORE	8.5	7.8	7.0	8.4	7.3	8.1	8.5	8.0	7.7	7.4	8.4	NA[1]
MEAN NCE AND STANDARD DEVIATION	47.1/16.8	38.8/15.5	38.8/16.2	43.4/18.7	41.7/15.5	38.8/20.0	41.1/19.1	39.9/19.3	41.7/16.5	38.5/15.1	40.9/16.9	42.3/13.8
SPANISH N-COUNT=	130	128	120	130	130	129	133	116	130	115	109	99
MEAN RAW SCORE	34.0	20.4	23.5	30.0	33.8	18.4	23.5	19.3	63.8	44.3	62.5	211.0
MEAN SCALED SCORE	661.6	656.1	651.8	675.7	659.4	675.2	684.3	672.3	666.3	655.1	679.7	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	22-3	5-2	8-2	11-3	13-3	4-2	13-3	9-2	11-3	7-2	15-3	NA[1]
G.E. OF THE MEAN SCALED SCORE	7.2	6.2	5.9	7.2	6.4	7.7	8.1	7.6	6.7	6.1	8.0	NA[1]
MEAN NCE AND STANDARD DEVIATION	40.5/17.3	28.1/15.6	32.0/15.8	37.2/17.7	37.1/15.1	35.4/17.8	39.5/17.4	36.7/17.7	35.5/16.5	29.6/15.8	38.4/14.7	37.8/13.2
SPANISH EXCLUSIVELY N-COUNT=	0	0	0	0	0	0	0	0	0	0	0	0
MEAN RAW SCORE												
MEAN SCALED SCORE												
GROUP PR-S OF MEAN SCALED SCORE												
G.E. OF THE MEAN SCALED SCORE												
MEAN NCE AND STANDARD DEVIATION												

NA[1] This score cannot be provided for battery totals since they yield no scaled scores.

PROCESS NO. 00-002714-606

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STANFORD A /EMENT TEST

SCHOOL PUEBLO HIGH SCH
SYSTEM TUCSON UNIFIED DISTR
TEST DATE 04/20/87

GRADE 9
LEVEL ADVANCED FORM E
STANFORD NORMS GR 09.8

ARIZONA
PUPIL ACHIEVEMENT
TESTING

ANALYSIS OF VARIABLES SCHOOL REPORT
COPY 2 PAGE 2

PRIMARY LANGUAGE	READING COMP.	VOCAB.	LISTENING COMP.	SPELLING	LANGUAGE	CONCEPTS OF NO.	MATH COMP.	MATH APP.	TOTAL LANGUAGE	TOTAL LISTENING	TOTAL MATH.	BASIC BATTERY
NAVAJO N-COUNT=	1	0	1	1	1	1	1	1	1	0	1	0
MEAN RAW SCORE	36.0		18.0	24.0	27.0	14.0	17.0	17.0	51.0		48.0	
MEAN SCALED SCORE	665.0		627.0	652.0	638.0	652.0	659.0	662.0	645.0		658.0	
GROUP PR-S OF MEAN SCALED SCORE	31-4		3-1	6-2	3-1	3-1	4-2	7-2	5-2		4-2	
G.E. OF THE MEAN SCALED SCORE	7.5		4.2	5.6	4.8	6.5	6.7	7.0	5.3		6.7	
MEAN NCE AND STANDARD DEVIATION	42.5/ 0.0		17.3/ 0.0	27.2/ 0.0	27.2/ 0.0	24.2/ 0.0	26.3/ 0.0	32.3/ 0.0	24.2/ 0.0		28.2/ 0.0	
NAVAJO EXCLUSIVELY N-COUNT=	0	0	0	0	0	0	0	0	0	0	0	0
MEAN RAW SCORE												
MEAN SCALED SCORE												
GROUP PR-S OF MEAN SCALED SCORE												
G.E. OF THE MEAN SCALED SCORE												
MEAN NCE AND STANDARD DEVIATION												
OTHER N-COUNT=	0	0	0	0	0	0	0	0	0	0	0	0
MEAN RAW SCORE												
MEAN SCALED SCORE												
GROUP PR-S OF MEAN SCALED SCORE												
G.E. OF THE MEAN SCALED SCORE												
MEAN NCE AND STANDARD DEVIATION												
OTHER EXCLUSIVELY N-COUNT=	0	0	0	0	0	0	0	0	0	0	0	0
MEAN RAW SCORE												
MEAN SCALED SCORE												
GROUP PR-S OF MEAN SCALED SCORE												
G.E. OF THE MEAN SCALED SCORE												
MEAN NCE AND STANDARD DEVIATION												
UNKNOWN N-COUNT=	16	16	16	16	17	18	20	18	16	10	13	7
MEAN RAW SCORE	25.6	19.8	23.6	24.4	29.0	14.6	17.5	15.4	52.5	43.5	46.2	163.9
MEAN SCALED SCORE	634.8	652.8	652.2	653.8	643.8	654.6	657.3	654.2	646.7	652.6	654.8	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	7-2	6-2	16-3	7-2	5-2	3-1	3-1	4-2	6-2	11-3	3-1	NA[1]
G.E. OF THE MEAN SCALED SCORE	5.2	6.0	5.9	5.7	5.1	6.6	6.6	6.6	5.5	5.9	6.6	NA[1]
MEAN NCE AND STANDARD DEVIATION	27.8/14.7	26.1/12.1	32.3/15.4	27.0/17.7	29.3/12.2	24.9/14.2	27.3/15.4	27.0/16.4	25.1/14.0	28.6/ 9.1	25.9/13.0	25.4/ 5.8
LIMITED ENGLISH PROFICIENT (LEP) IN PROGRAMS BY MODEL												
SECONDARY BILINGUAL 7-12 N-COUNT=	18	16	17	18	18	19	19	16	18	15	16	14
MEAN RAW SCORE	27.2	19.3	21.5	26.4	29.0	16.4	20.4	17.4	55.4	40.9	56.3	185.2
MEAN SCALED SCORE	639.9	650.6	643.1	664.2	644.1	663.6	671.2	663.1	652.4	647.4	669.7	NA[1]
GROUP PR-S OF MEAN SCALED SCORE	9-2	5-2	9-2	11-3	5-2	7-2	10-2	8-2	8-2	8-2	10-2	NA[1]
G.E. OF THE MEAN SCALED SCORE	5.5	5.9	5.2	6.4	5.1	7.1	7.3	7.0	5.7	5.5	7.4	NA[1]
MEAN NCE AND STANDARD DEVIATION	30.0/16.7	25.4/18.8	26.4/17.9	31.5/23.7	29.2/17.8	29.7/15.0	32.8/17.1	32.0/18.0	28.1/20.7	25.4/18.6	33.4/14.4	30.6/16.0

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NA[1] This score cannot be provided for battery totals since they yield no scaled scores.

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STANFORD AC EMENT TEST

SCHOOL PUEBLO HIGH SCH. -
SYSTEM TUCSON UNIFIED DISTR
TEST DATE 04/20/87

GRADE 9
LEVEL ADVANCED FORM E
STANFORD NORMS GR 09.8

ARIZONA
PUPIL ACHIEVEMENT
TESTING

ANALYSIS OF VARIABLES SCHOOL REPORT
COPY 2

	READING COMP.	VOCAB.	LISTENING COMP.	SPELLING	LANGUAGE	CONCEPTS OF NO.	MATH COMP.	MATH APP.	TOTAL LANGUAGE	TOTAL LISTENING	TOTAL MATH.	BASIC BATTERY
LIMITED ENGLISH PROFICIENT (LEP) IN PROGRAMS BY MODEL												
BILINGUAL/BICULTURAL K-12 N-COUNT=	9	8	8	9	9	9	9	8	9	8	8	7
MEAN RAW SCORE	43.6	25.9	28.6	37.9	29.2	22.3	30.9	23.6	67.1	54.5	76.1	242.4
MEAN SCALED SCORE	694.9	683.6	682.8	709.0	646.6	694.9	719.7	689.5	671.2	680.9	700.5	NA¹
GROUP PR-S OF MEAN SCALED SCORE	75-6	44-5	72-6	67-6	6-2	35-4	70-6	38-4	23-4	53-5	51-5	NA¹
G.E. OF THE MEAN SCALED SCORE	10.6	8.3	9.3	10.1	5.4	9.0	11.4	8.9	7.1	8.6	9.5	NA¹
MEAN NCE AND STANDARD DEVIATION	55.5/16.8	41.9/16.4	49.2/23.8	51.7/17.0	30.9/18.6	45.5/17.1	55.3/17.3	45.3/20.1	38.5/13.6	44.4/17.9	48.3/16.9	47.8/13.8
ENGLISH AS SECOND LANGUAGE N-COUNT=	3	1	2	3	3	3	3	1	3	1	1	1
MEAN RAW SCORE	22.3	23.0	20.5	26.0	31.0	12.7	21.3	9.0	57.0	44.0	38.0	184.0
MEAN SCALED SCORE	625.7	668.0	637.5	659.0	649.7	644.7	676.3	626.0	654.0	654.0	643.0	NA¹
GROUP PR-S OF MEAN SCALED SCORE	4-2	18-3	6-2	8-2	8-2	1-1	15-3	1-1	9-2	12-3	1-1	NA¹
G.E. OF THE MEAN SCALED SCORE	4.6	7.1	4.8	6.0	5.6	6.1	7.6	5.2	5.9	6.0	6.0	NA¹
MEAN NCE AND STANDARD DEVIATION	23.0/11.3	34.4/ 0.0	23.6/ 2.5	29.5/18.5	32.5/ 8.9	20.2/ 8.4	35.8/ 6.2	10.4/ 0.0	29.0/15.5	29.9/ 0.0	20.4/ 0.0	30.7/ 0.0
INDIVIDUAL EDUCATION PROG. N-COUNT=	2	2	2	2	2	2	2	2	2	2	2	2
MEAN RAW SCORE	34.0	21.0	27.0	28.5	38.0	23.0	28.5	28.0	66.5	48.0	79.5	228.0
MEAN SCALED SCORE	659.5	659.0	667.0	668.0	670.0	699.5	705.0	708.0	669.0	663.0	704.0	NA¹
GROUP PR-S OF MEAN SCALED SCORE	26-4	9-2	40-5	13-3	28-4	42-5	50-5	62-6	21-3	21-3	55-5	NA¹
G.E. OF THE MEAN SCALED SCORE	7.0	6.5	7.4	6.6	7.4	9.4	9.8	10.5	6.9	6.8	9.8	NA¹
MEAN NCE AND STANDARD DEVIATION	40.2/ 7.1	29.9/ 6.4	41.6/ 8.2	34.4/16.1	42.4/ 4.0	47.7/18.8	49.5/ 9.8	55.7/ 3.5	37.6/10.8	35.1/ 0.0	50.3/ 7.9	41.1/ 7.9
RACIAL/ETHNIC BACKGROUND												
WHITE (NOT HISPANIC) N-COUNT=	58	54	48	58	58	59	58	52	58	46	50	43
MEAN RAW SCORE	47.4	27.1	27.4	32.8	39.5	22.0	27.2	24.2	72.3	55.4	73.7	245.3
MEAN SCALED SCORE	690.7	692.2	671.5	687.9	678.1	697.2	701.5	694.1	681.8	683.7	697.2	NA¹
GROUP PR-S OF MEAN SCALED SCORE	74-6	65-6	49-5	27-4	38-4	31-4	39-4	37-4	36-4	63-6	40-5	NA¹
G.E. OF THE MEAN SCALED SCORE	10.1	9.0	7.9	8.2	8.4	9.2	9.5	9.3	8.1	9.0	9.2	NA¹
MEAN NCE AND STANDARD DEVIATION	53.5/17.7	45.9/17.9	43.8/16.2	42.4/20.4	46.1/17.4	45.9/21.2	47.1/17.2	47.5/20.2	43.8/18.4	46.2/16.5	46.8/16.3	48.1/15.6
BLACK (NOT HISPANIC) N-COUNT=	11	7	8	11	11	11	11	9	11	6	9	5
MEAN RAW SCORE	34.0	24.3	24.5	29.2	35.6	20.3	25.2	21.1	64.8	48.0	66.6	220.2
MEAN SCALED SCORE	660.1	674.6	657.6	679.3	665.7	684.9	692.3	679.3	670.5	664.2	685.8	NA¹
GROUP PR-S OF MEAN SCALED SCORE	26-4	27-4	24-4	22-3	22-3	24-4	33-4	24-4	22-3	23-4	29-4	NA¹
G.E. OF THE MEAN SCALED SCORE	7.0	7.6	6.5	7.4	7.0	8.3	8.7	8.1	7.1	6.8	8.4	NA¹
MEAN NCE AND STANDARD DEVIATION	39.5/16.9	37.7/14.1	35.5/18.7	38.0/27.1	40.4/15.9	40.9/14.8	42.9/17.5	40.9/14.5	37.6/21.7	35.4/15.6	41.5/14.6	38.2/12.1
HISPANIC N-COUNT=	341	320	306	341	341	340	345	291	341	294	281	256
MEAN RAW SCORE	36.0	22.6	24.7	32.2	35.2	18.7	23.4	19.8	67.5	47.6	63.1	217.4
MEAN SCALED SCORE	668.2	666.8	657.9	684.9	663.5	676.4	684.7	673.8	672.4	662.8	680.7	NA¹
GROUP PR-S OF MEAN SCALED SCORE	31-4	14-3	16-3	23-4	17-3	4-2	14-3	11-3	18-3	15-3	16-3	NA¹
G.E. OF THE MEAN SCALED SCORE	7.7	7.0	6.5	7.9	6.8	7.7	8.2	7.8	7.2	6.8	8.1	NA¹
MEAN NCE AND STANDARD DEVIATION	43.5/16.7	33.6/15.4	35.6/16.0	41.3/17.7	39.1/14.9	36.0/18.8	39.3/18.2	37.5/18.1	38.9/16.0	34.2/15.1	38.8/15.7	39.6/13.2

NA¹ This score cannot be provided for battery totals since they yield no scaled scores.

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STUDENT FINANCIAL ASSISTANCE IN THE ARIZONA PUBLIC UNIVERSITIES

VINETTE COWART

In 1986-87, Arizona postsecondary educational institutions distributed $289,088,907 in student financial assistance. Almost half of this aid, $144,800,223 was administered by the three public universities in the state (ACPE). Nearly two-thirds of university aid was in the form of loans and student employment, commonly called self-help aid. Gift aid (scholarships and grants) comprised the remaining third. (Table 1)

Students who have qualified for financial assistance may receive a "package" of awards consisting of a grant, a loan, and a college work-study position--three awards. Other students may qualify for only a loan, thus receiving one financial aid award. Scholarships and tuition/fee waivers are awarded on the basis of need, ability, or faculty/staff/dependent status. Students employed on campus and graduate assistants are also included in institutional financial assistance calculations.

Comparisons among the universities are further complicated by the fact that data are reported by number of awards more often than by number of recipients. Thus, caution is suggested in drawing conclusions about recipients of financial aid from the data presented. General trends, however, can be inferred.

STUDENTS

Financial aid awards appear to be distributed equally among male (49%) and female (51%) students at the three universities. Using the Fall 1986 headcount at ASU and NAU (UA data are not comparable) we can determine an approximate distribution of financial aid by ethnicity. Financial aid was distributed to 75.5 percent of the Black students and 65 percent of the Hispanic students. Fifty percent of the Asian students at ASU received aid while 90 percent of the Asians at NAU did. Reasons for this wide variation are unknown. All American Indian students received aid due mainly to Bureau of Indian Affairs (BIA) tribal funds. Non-minorities receiving aid ranged from a low of 41 percent of the enrollment at ASU to a high of 52 percent at NAU. It appears that minority students are more heavily dependent upon financial aid than non-minority students. No data were available regarding the number of non-resident students who receive financial aid (Table 2).

Vinette Cowart is a graduate research associate at Arizona State University working on a PhD in Higher Education. Prior to coming to ASU in 1986, she was Program Coordinator of minority programs in the College of Engineering at the University of Alabama in Birmingham and Assistant Director of Admissions and Acting Director of Enrollment Management at Oregon Institute of Technology. Since beginning her doctoral work at ASU, she has worked with the College of Education and the Hispanic Mother Daughter Program. She also holds certification as a rehabilitation counselor and as an elementary teacher.

DISTRIBUTION OF FINANCIAL AID

Minority students at the three universities receive about one quarter of the scholarships and grants. The notable exception to this is the American Indian students at NAU who receive nearly half of the grant funds distributed due to BIA funding. Minorities receive approximately 17 percent of the loan and employment monies. This means that minorities rely more heavily on gift aid, largely due to targeted aid, and non-minorities rely to a greater extent on self-help aid. This trend was especially evident in the 1970's when targeted aid was more abundant.

Respondents to the American College Testing Program's alumni survey of 1981 graduates of the Arizona universities reported that educational grants had been a major or minor source of funding for 49 percent of the minority alumni compared to 20 percent of the non-minority alumni. Scholarships were a major or minor source for 48 percent of the minorities and 27 percent of the non-minorities. Parents or relatives provided 72 percent of the non-minorities with the major or minor portion of their college costs as compared to 54% of the minorities. Loans, employment, and personal savings were about the same for all groups (Church, 1988).

From a recent survey conducted at the three universities of 402 undergraduate, full-time students, there appears to be a greater dependence on a combination of loans, grants, and employment. However, the majority of students still depend most heavily on parents and family for their financial support. Black and Hispanic students classified financial problems as the main problem facing minority students at the universities. For American Indian and Asian students, financial difficulties ranked as the second most significant problem, after academic and social issues, respectively (Cotera, 1988).

FEDERAL FINANCIAL AID

Federal aid increased by 39.8 percent between 1980 and 1987, from $10.4 billion to $14.5 billion. However, when calculated in constant 1982 dollars, the federal aid increase was only 8.8 percent (College Board, 1988). During this time Pell Grant recipients declined by 3.3 percent, Supplemental Educational Opportunity Grants (SEOG) by 3.9 percent, and College Work Study (CWS) by 8.1 percent. Stafford (Guaranteed/GSL) Student Loans went to 20 percent more students while state grants and State Student Incentive Grants (SSIG) recipients increased by 41 percent (Appendix). Computed in 1982 constant dollars, federal financial aid awards, whether grant or loan, decreased by an average of 15 percent. Only the Pell Grants kept pace with inflation; however, 89,000 fewer students received the grants (College Board, 1988).

In the mid-1970's, loans comprised only one fifth of all federal student financial aid. By 1986-87, loans were nearly half of all the aid distributed nationally. Clearly, minority as well as non-minority students must rely heavily on the federal loan programs and employment to fund their education, although minorities to a slightly lesser degree than non-minorities.

STATE FINANCIAL AID

These actions by the federal government have placed a greater burden on the states to increase their financial aid programs. In Arizona the estimated total State Student Incentive Grant (SSIG) awarded in 1987-88 was $3,254,000. This ranks Arizona in the bottom third of the states in terms of directly appropriated state funds for student aid.(NASSGP, 1988) When compared with five states with similar populations, tax funds, and state appropriations to higher education, Arizona ranks last except in the categories of number of undergraduates and funds for higher education (Table 3).

However, the Arizona Board of Regents has provided a very generous tuition/fee waiver program that is not reflected in calculations of directly appropriated funds. Of the institutions in the western athletic conferences who responded to a recent EEC Task Force survey, regardless of student enrollment and expenditure authority, the three Arizona universities had the largest tuition/fee waiver program (Table 4).

The Regents' waivers are awarded on the basis of academic ability, talent, need, or faculty/staff/dependent status. They are awarded to community college transfers, minority students, single students with dependents, and the top 10 percent of each graduating high school class in the state of Arizona. At least 50 percent of these waivers must be awarded on the basis of documented financial need. Also, the ABOR has set automatic increases in the numbers of waivers based on enrollment growth. Between 26 to 39 percent of other institutional funds are awarded in categories which include targeted ethnic groups. An average of 16 percent of institutional funds are used for athletic scholarships (Table 5).

In the spring of 1988, the Arizona Board of Regents proposed the Arizona Financial Aid Trust. This proposal sought $1,000,000 from the legislature to match $1,000,000 from student contributions. Half of this $2,000,000 was to be used for grant aid to undergraduate state residents while the other half of the principal and all of the interest was to be endowed for future aid. These grant funds were to be directed toward students with financial need, minority students, and the educationally disadvantaged. This proposal was not approved by the legislature.

OTHER STATES' PLANS

The Madison Plan of the University of Wisconsin-Madison uses institutional gift funds to finance the FASTrack program. FASTrack is for financially dependent, low income Wisconsin residents. Students entering the program are assured that their financial need will be fully met for four to five years. A combination of grants and work finance the freshman year. A loan, limited to $800 per year, is added to the financial aid package after the freshman year. This plan has several notable merits: first, the students incur no debt during the freshman year; second, they are assured they will be financially able to complete college; third, the program uses the positive retention aspects of work to help the student adjust to campus; and fourth, the student knows repayment will be no more than $35 per month for ten years after he/she leaves school.

Another aspect of the Madison Plan is the coordination through one office of all merit scholarships, whether university-wide or college/school specific. This highly visible program provides more information for students, prospective scholars, and donors (UWM, 1988).

Because costs of higher education continue to outpace the rate of inflation, forty states are currently considering state-assisted savings and credit plans to help parents pay for their children's education. The federal government is also looking at college savings plans. Plans vary from prepayment of a set tuition fee for a particular college to the proposed use of U.S. Savings Bonds as College Savings Bonds. Both the existing state and proposed federal plans are struggling with issues regarding the rate of return on the investment, tax liabilities, and administrative costs. The proposed federal programs have one advantage over the individual state programs in that they do not restrict interstate attendance. It is generally believed that these plans will be used by the upper-middle class and upper-class, those that can afford to save money for a college education. Programs such as these will have little impact on lower-income families; this segment of Arizona's population is most at risk.

POTENTIAL BARRIERS TO A UNIVERSITY EDUCATION

MINORITY CONSIDERATIONS

Minority groups who are under-represented in education are disproportionately from the lower income stratum, from families with limited exposure to formal education, and from environments where the benefits of education are not much in evidence.

Richardson (1988) has identified three categories of minority students at American universities. One group consists of second or third generation middle class students whose parents are college graduates, are well-prepared academically, and have a commitment to education. This group's access is essentially the same as non-minority middle class students. A second group is composed of first generation, upwardly mobile students who have a strong belief in education but whose academic preparation is inadequate. These students do not have family or friends who understand the higher education system. The third group are also first generation college students with insufficient academic preparation; however, they are uncertain of the rewards of education. They generally attend college after military service or in connection with their employment.

Ogbu (1988) describes two types of minorities, the immigrant and the involuntary. The immigrant minorities come to the new country expecting their life to be better. They generally do well because they are goal oriented and have primary cultural differences. Ogbu defines primary cultural differences as:

> ...cultural differences which existed prior to their emigration. [that] enable the immigrants to perceive and respond to cognitive and other differences they encounter as barriers to be overcome without fear of losing their own cultural identity. (Ogbu, 1988)

Blacks, American Indians, and Mexican Americans are examples of involuntary minorities. They were brought to the United States against their will or through conquest. They have experienced generations of limited participation in society due to economic, social, and political barriers. Involuntary minorities have secondary cultural differences. These differences evolved after being incorporated into society and "affect how they respond to the cognitive, linguistic, and cultural differences they encounter in school or test situations." (Ogbu, 1988)

SOCIOECONOMIC CONSIDERATIONS

For students from low socioeconomic backgrounds, regardless of race or ethnicity, higher education is for the most part inaccessible, financially, academically, and culturally. Using data from the national survey, High School and Beyond, Valerie Lee (1987) studied access to higher education by both minorities and low socioeconomic status Whites and found that the decision to attend college is strongly influenced by a student's socioeconomic status. Such parameters as low socioeconomic status, being a minority, especially a Hispanic of Mexican origin, having only average academic ability, and being female were found to be negatively related to college attendance and persistence. In 1980, approximately one fourth of Arizona's population had an annual income of less than $10,000. Of this group, 69.5 percent, or 114,170, were non-minorities (Bartrum,1988).

Low socioeconomic status has a profound influence on access to higher education. The cost of living has increased in the United States by 87 percent in the last decade while the cost of attending a public college has risen 114 percent (Shearer, 1988). It is anticipated that tuition may continue to increase from two to three percent per year above inflation. Between the academic years of 1981-82 and 1986-87, the average increase in financial aid for Arizona university students was 19 percent. In the same period tuition increased 51 percent, registration fees increased 84 percent, and the total resident and non-resident costs of education increased 58 percent.

The cost of education is estimated by financial aid offices in determining financial need and amount of aid. The cost of education includes registration fees, room and board, transportation, and incidentals. In 1986-87, the average resident cost of living for the Arizona public universities was $6,771. The average aid received by students was $3,217 (of which $2,500 was loans), or slightly less than half of the estimated cost.

According to the 1980 Census, the median family income in Arizona for whites and Asians was approximately $20,000. For Hispanics the median was slightly less than $16,000, for Blacks about $14,000, and for Native Americans a little more than $10,000. (More recent estimates have placed the median household income of all Arizonans at $29,473, with Hispanics at $21,246.) The average estimated family income of freshmen entering American higher education today is between $35,000 and $40,000 (Astin, 1987). The median family income for full-time Arizona undergraduates in our universities is approximately $39,500. Most students from this average-family-income bracket will have financial need and will be eligible for financial assistance at our universities. Clearly, financial concerns have a profound influence on access to a university education.

DEMOGRAPHICS

In 1980, Arizona's population was 74.5 percent White and 25.5 percent minority: 16.2 percent Hispanic, 5.6 percent Native American, 2.7 percent Black, and 0.8 percent Asian. Minorities comprised only 12.5 percent of the state universities enrollment and 20.3 percent of the community college enrollment in 1986. Exact figures on high school graduation by ethnicity are unavailable, but closest estimates would suggest that of a cohort of ninth graders in 1984, 68 percent of the non-minority students graduated in 1987 while 57 percent of the minority students graduated (Bartrum, 1988). In other words, a great number of our students, especially minorities, choose alternate pathways. Many do not view our current education system as meeting their needs or pertinent to their life goals.

The American Indian and Hispanic populations of Arizona are projected to nearly double by the year 2000. This expansion will be in the school age population. Arizona's entire education system must serve these populations more effectively than in the past if the state is to realize equity and continue its economic growth.

ENVIRONMENTAL INFLUENCES OF COMMUNITY

In most minority and low socioeconomic communities, college graduates, and to some degree high school graduates, are not common. Adults are employed mainly in blue collar and unskilled occupations. Although seasonal, cyclical, and declining industries, such as mining, provide employment, the nature of these industries results in greater periods of unemployment for large numbers of this population. As is well known, high schools in many low socioeconomic neighborhoods have higher dropout rates and higher minority enrollment. In a report analyzing the Stanford Achievement Test scores of ninth through twelfth grade students in Arizona, it was found that schools with high percentage minority enrollments had lower basic skills achievement scores than did other schools (Cotera, 1988). Adequate academic preparation for a college education is the exception rather than the rule in these schools.

For those students who do manage to complete successfully a college preparatory track in high school and who have not been discouraged from their educational goal by peer pressure or family obligations, receiving accurate and timely information about college is critical. Typically, information regarding college programs, admission procedures and requirements, financial aid application procedures and deadlines is handled by high school counselors and the recruitment/outreach efforts of the admissions and financial aid personnel of the universities. The student who is an outstanding athlete or has superior academic or other talent will receive information about university opportunities and scholarships.

The students who get lost in the process are those of average to above average academic ability, who are not "outstanding", and who do not have the initiative, self confidence, or knowledge of the system to seek out the information they need. For these students, even one supportive, encouraging adult can make the difference between seeking out college information or choosing another direction. Since the student's goals and the family are the two most influential reasons given by students for college attendance, informing all high school students and their families about college opportunities is imperative.

Relying on traditional methods of recruitment techniques may fail to access the most effective avenues of communication in minority and low socioeconomic neighborhoods. Presentations and participation in the typical Hispanic tardeada or the Native American pow wow, for example, could provide meaningful information to a population who currently may not be effectively reached. The fact that more minorities attend the community colleges suggests that the "community" involvement of the college, in addition to the lower cost and lower admission requirements, make these institutions much more accessible for this population.

FINANCIAL AID APPLICATION

For those students who get as far in the process as obtaining the financial aid applications, the complexity of the forms is a major potential barrier to pursuing any type of postsecondary education. For example, the following is excerpted from the instructions for completing the College Scholarship Service Financial Aid Form (FAF). (Completion of this form (or the alternate ACT form) is required of all students seeking financial aid.)

> WARNING: It is important that you fill out this form accurately, even though it may be difficult and time-consuming. COMPLETING THE FORM INCORRECTLY WILL CAUSE YOU SERIOUS PROBLEMS (p.1).

On page three of the instructions, the following complex language is presented:

> If you are divorced, separated, or widowed, answer questions 18 and 19 only about you, the student (not your spouse). 18. Check "yes" if you (or your spouse) are classified as a dislocated worker....(FAF, 1988-89)

Both the FAF and ACT (The American College Testing Program) forms will probably intimidate any applicant, let alone parents with limited reading and mathematics skills, or " new from high school" students. The mathematics calculations required to compute income and assets can be extremely confounding for people who are not required to complete income tax returns.

One state university director of financial aid stated that the required federal financial aid application was not only "very complex and difficult" but it also is a "potential barrier" to pursuing a college degree. The director went on to state, "In addition to the completion of this form, many other documents are required by the parents and the students. Although [our] office attempts to provide many presentations and seminars in helping students and parents to complete these forms, it is believed to be a difficult process particularly if parents have not gone to college and do not understand many of the questions that relate to their own tax returns or other financial terms."

FINANCIAL AID OFFICES

All three state universities offer counseling assistance, workshops, and helpful information by telephone, but those that receive this help usually have already accessed the system in some way. It is often difficult for those of us who are involved with universities on a daily basis to realize what foreign and intimidating institutions they are to a large segment of our society. It is difficult to ask for help when you are not sufficiently familiar with the terminology to phrase a question or knowledgeable enough about the system to seek out the appropriate office or person.

The financial aid offices target institutional aid resources such as scholarships, Regents' tuition waivers, and special need waivers toward minority and other high-need students. They attempt to provide as much gift aid during the first two years as possible for these students. Federal guidelines prohibit differential packaging for varying classes of students, so financial aid personnel cannot target special groups with the federal financial aid programs. As one director of financial aid stated, "There are never enough gift aid funds (grants and scholarships) to meet the documented financial need of our aid applicants, despite our policy of attempting to meet half of the student's need with gift aid."

INDEBTEDNESS: LOANS

In 1986-87 more than sixty percent of all need-based financial aid was in the form of loans. For undergraduate Arizona students dependent on loans, after four years of college, the average indebtedness is approximately $9,000. A five-year completion rate, which is increasingly the norm, raises that indebtedness to $12,000. Assuming an average starting salary after graduation of $19,000 and a loan indebtedness of $12,000, the monthly loan repayment would be about $150 a month for ten years (loan consolidation would lower the monthly payments, but prolong the debt). With a net income of about $1,200 per month, the graduate would have about $1,050 for living expenses. Minority concerns about incurring substantial indebtedness is realistic given the fact that the ACT alumni survey (Church, 1988) showed that minority alumni earn less than the non-minority alumni. The financial prospects of this degree of indebtedness will likely discourage most students from poor and minority populations. Also, the widely publicized default rates can be a disincentive for these students. Proposed legislation to make colleges more responsible for reducing student loan defaults may have an adverse impact on the populations most in need.

FINANCIAL ASPECTS OF PERSISTENCE

It is generally accepted that withdrawal of students from higher education is highest within the first two years of college attendance. Although financial problems are consistently among the top three reasons given for leaving school, other factors often underlie withdrawal. Within the first year of attendance, students usually find out whether they "fit" academically, culturally, and socially in the institution. The strength of the commitment to the academic career goal and to the institution are severely tested. The degree of personal commitment to an academic or career goal is the single most important determinant of persistence in college (Cope and Hannah). Lack of money is a socially acceptable reason to discontinue attending school, regardless of the actual financial status of the student.

> Students often use the category of finances to describe their evaluation of the benefits of their experience relative to the cost of that experience. That is to say that student decisions to leave reflect not so much cost per se as it does the value of what they receive for that cost. Not surprisingly their notions of value are tied to the quality of their academic and social experiences in the college (Tinto, 1988).

Students who persist into the sophomore year have an increased probability of completing their degree. If they experience financial difficulties they find or increase work, take out more loans, stop-out to work full-time and return later, or reduce to part-time attendance. They make adjustments, but they persist. Surviving the first year is the first and crucial hurdle. Completing the degree with manageable indebtedness is the next obstacle.

From a financial view, what can be done during that first year of attendance to enhance persistence? Studies have shown that direct involvement with the campus has a strong positive correlation with persistence. Funding a state work-study program in order to provide more work opportunities for greater numbers of students would reduce the loan indebtedness of students. Also, provision for loans that are prorated to the time of withdrawal would be less handicapping financially for students, especially those who may want to return to higher education at a later time. Financial difficulties affect the student, family, and the environment of the home. Placing counseling support services and financial aid offices in close proximity and having cooperative student referral between the offices could help students persist.

CONCLUSION

As it presently exists, the financial aid system in Arizona works best for those who manage to make effective contact with the university structure. Financial access now tends to preserve the status quo and by and large the universities have been comfortable with the status quo. We have been content to educate those students most like ourselves. Unless changes are made in access to the state universities, the current system will continue to rigidify the stratification which exists in our society. In an address to state educators in April, Harold Hodgkinson stressed that Arizona is a state of extremes, in terms of population density, age, wealth, and educational attainment. Arizona has many students who complete graduate school and many students who do not graduate from high school. If a two-tiered society is not desired in this state, immediate action must be taken to insure access to our universities for a much greater percentage of our population.

RECOMMENDATIONS

- The state should develop a financial assistance program for resident students with financial need in which loan indebtedness is kept to a minimum. Programs which should be considered by the state include:

1. A combination of state grant, institutional work-study, and small federal loan. This plan would focus grants and work aid during the freshman and sophomore years and limit the amount of loans needed to complete a baccalaureate degree to no more than $5,000.
2. A scholarship loan program. This plan would offer state funded scholarships to prepare for career employment which become loans only if the recipient fails to meet the employment or service criteria of the program.
3. A loan forgiveness program. The state would forgive or repay loans in exchange for service in an occupation which the state has determined as critical.

- Institutions should actively seek additional private funding for scholarships.
- The Arizona Board of Regents should continue its tuition/fee waiver program.

APPENDIX

TYPES OF AID

College Work-Study Program (CWS)--students with financial need are eligible for jobs as part of their financial aid package. Jobs can be on-campus or off-campus in public or non-profit agencies. The amount a student can earn depends on financial need and the amount of money the institution has available. Federal funds cover 80 percent of the wages and the institution provides the remainder. Created by the Economic Opportunity Act of 1964.

Loans for Parents--parents may borrow $4,000 per year to pay the expected family contribution determined by a need analysis. The amount borrowed in any one year cannot exceed educational costs. The interest rate is the same as that for Supplemental Loans for Students. Repayment of these loans must begin 60 days after the proceeds are received. Parents must pass a credit check which may disallow the neediest parents.

Native American Grants--aid controlled by the Indian tribes. In 1983-84 the average award was $2,650.

Carl D. Perkins National Direct Student Loan (Perkins)-- formerly National Direct/Defense Loan (NDSL)--low interest loan (currently 5 percent) based on financial need with priority given to students with exceptional need. This loan is administered by the institution; it is the institution which determines the amount of the loan within federally set limits. The cumulative limits are $4,500 during the freshman and sophomore years, and $9,000 for the junior and senior years. Repayment begins six months after graduation (or cessation of attendance) with up to 10 years to pay. These loans are eligible for inclusion in loan consolidation. Deferment or partial cancellation of the loan is possible if the student enters specified types of service after school.

Pell Grants (Basic Educational Opportunity Grant)--provide grants to qualified undergraduate students based on financial need which are determined by use of a formula calculating income, assets, etc. This program was created by the 1972 amendments to the Higher Education Act as a grant entitlement program available to every eligible student for use at any postsecondary institution. No other federal aid is awarded without considering the student's eligibility for a Pell Grant.

Private Scholarships--external sources such as civic groups, businesses, industry, or individuals contribute funds for students. The university or the donor selects the recipients. Awards range form $50 to $2,500 for the academic year.

Regents' tuition/fee waivers--waives fees for resident students and tuition for non-resident students. Fifty percent of the awards must go to students with documented financial need. ABOR has increased these waivers by 25 percent since 1986.

Stafford Student Loans--formerly Guaranteed Student Loan (GSL)--loans at below market interest rates (currently 8 percent) which are free from interest charges while a student is enrolled in an educational program. They are based on financial need. The loan is made to the student but the dependent student's family income, assets, and expenses are subject to a need analysis to determine eligibility. Maximum yearly loans for freshmen and sophomores is $2,625 per year and $4,000 per year for upper-level undergraduates. A total of $17,250 is allowed for undergraduate study. To be eligible a student must be enrolled at least half time, have no outstanding debt from a previous student-loan default, pay a 5 percent origination fee, make satisfactory academic progress, and be a U.S. citizen or permanent resident alien. These loans are eligible for inclusion in loan consolidation. Stafford Loans is the single largest federal aid program.

State Student Incentive Grant (SSIG)--provides assistance to students with financial need on a 50-50 cost-sharing basis between federal and state governments. The states determine specific dollar amounts and administer the funds.

Supplemental Educational Opportunity Grant (SEOG)--provides grants to assist undergraduate students with exceptional financial need. Grants range from $200 to $2,000 for the academic year. It is available for full and part-time students who must make satisfactory progress.

Supplemental Loans for Students--allows independent undergraduate students to borrow up to $4,000 per year (total of $20,000). The interest rate is variable based on the one-year Treasury bill rate plus 3.75 percent, with a maximum of 12 percent. Repayment of principal plus interest begins as soon as the student leaves school or drops below full-time attendance.

Tuition set aside program--authorized by ABOR to provide funds for aid to students with financial need. By 1988-89, the value of the set aside program should be over $1 million.

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TABLES

TABLE 1
STUDENT FINANCIAL ASSISTANCE - ACTIVITY REPORT - 1986-87

TYPE AID	ASU RECIPIENTS	ASU AMOUNT DISBURSED	NAU RECIPIENTS	NAU AMOUNT DISBURSED	UA RECIPIENTS	UA AMOUNT DISBURSED
I. GIFT AID						
SCHOLARSHIPS						
UNIVERSITY WAIVERS	4,086	7,636,382	2,787	2,609,636	....not available......	
INST/PRIVATE SCHOLARSHIPS	4,434	5,023,628	1,234	852,586	....not available......	
TOTAL SCHOLARSHIPS	7,235*	12,660,010	4,021*	3,462,222	5,945*	7,443,799
GRANTS						
PELL	5,248	7,389,721	2,655	3,876,144	2,890	4,015,029
SEOG	1,636	1,595,805	405	303,499	197	292,845
SSIG	722	593,810	243	217,116	324	410,058
UNIVERSITY	656	340,175	162	117,409		
NATIVE AMERICAN	191	638,201	671	1,535,912	130	193,025
VETERANS BENEFITS	832	2,502,650	437	1,095,967		
TOTAL GRANTS	7,019*	13,060,362	4,573*	7,146,047	10,170*	4,910,957
TOTAL GIFT AID ($48,683,397 grand total)	14,254*	25,720,372	8,594*	10,608,269	16,115*	12,354,756
II. SELF-HELP AID						
LOANS						
STAFFORD (GSL)	8,149	20,712,876	2,585	5,289,758	4,885	13,341,618
PERKINS (NDSL)	1,783	2,377,492	602	768,962	944	1,677,330
PLUS	198	524,329	79	188,430	175	397,315
OTHER**	1,943	674,803	355	1,219,014	4,288	2,561,379
TOTAL LOANS	8,519*	23,100,061	3,621*	7,466,164	10,292*	17,977,642
EMPLOYMENT						
COLLEGE WORK STUDY	765	1,108,338	629	596,095	343	424,972
HOURLY, PART-TIME	3,565	4,667,441	2,578	2,352,349		
ASSISTANTSHIPS	1,821	11,351,963	370	1,666,670	....not available......	
TOTAL EMPLOYMENT	5,983*	17,127,742	3,577	4,615,114	10,429*	25,830,103
TOTAL SELF-HELP AID ($96,116,826 grand total)	14,502*	40,227,803	7,198*	12,081,278	20,721*	43,807,745
TOTAL SELF-HELP AID ($144,800,223 grand total)	20,135	65,948,175	7,418	22,650,845	18,252	56,162,501

* Reflects duplication

** Other loans include Health Professions Student Loan Programs, Health Education Assistance Loan Program (HEAL), Nursing Loan Program, and Alaska Loans.

Source: Arizona Commission for Postsecondary Education Report of Financial Aid in Arizona Postsecondary Educational Institutions for 1986-1987. Summary statement on the availability of financial aid for Arizona resident undergraduates, Arizona Board of Regents, December 2, 1987.

TABLE 2

FINANCIAL AID RECIPIENTS/AWARDS* BY TYPE, FALL 1986, SPRING 1987, SUMMER 1987

			UNDERGRADUATE					GRADUATE				
	TOTAL MALE	TOTAL FEMALE	NON-MINORITY	HISP	BLACK	AM IN	ASIAN	NON-MINORITY	HISP	BLACK	AM IN	ASIAN
SCHOLARSHIPS												
ASU	3108	3744	3780	616	280	188	159	1590	116	51	33	39
NAU**	2721	3596	4867	448	287	656	59	not available				
UA	1460	1769	2038	350	102	147	87	399	47	10	26	23
GRANTS												
ASU	3727	3084	5117	584	336	300	226	188	14	11	36	2
NAU	2363	3115	3188	509	179	1532	70	not available				
UA	1861	2147	2842	696	137	130	161	25	12	1	1	3
LOANS												
ASU	4663	4069	6292	577	348	147	212	1018	63	11	10	24
NAU	2696	2858	4650	453	137	245	69	not available				
UA	3055	2589	4102	576	184	49	164	922	66	20	12	29
EMPLOYMENT												
ASU	2556	2644	2961	296	142	72	116	1466	50	31	11	55
NAU	1804	2242	3336	324	93	232	61	not available				
UA***	166	202	253	65	19	8	10	10	1	0	0	2
UNDUPLICATED RECIPIENTS												
ASU	8740	8601	11591	1140	570	388	426	2818	182	79	69	78
NAU	3255	3891	5609	495	156	810	76	not available				
UA	not available											

* ASU and NAU data reflect number of recipients; UA data reflect number of awards.

** Academic year only; includes graduate students.

*** It appears this figure does not include graduate assistants and associates.

SOURCE: Arizona Board of Regents Minority Recruitment and Retention Report, December 4, 1987.

TABLE 3
ESTIMATED GRANT DOLLARS TO UNDERGRADUATES IN 1987-88 PER UNDERGRADUATE ENROLLMENT, ARIZONA AND COMPARABLE STATES*

STATE/RANKING**	NEED-BASED AID TO UNDERGRADUATES	STATE/RANKING	UNDERGRADUATE GRANT AID	STATE/RANKING	FALL 1985 UNDERGRADUATES
9. IOWA	$208	8. IOWA	$236	18. ARIZONA	179,075
19. OREGON	94	19. COLORADO	139	24. IOWA	126,044
21. OKLAHOMA	83	20. OKLAHOMA	129	25. OKLAHOMA	125,833
22. COLORADO	78	27. OREGON	94	26. COLORADO	119,737
41. ARIZONA	18	43. ARIZONA	18	29. OREGON	107,371
national average	154	national average	188	national average	180,721

TOTAL STATE GRANTS AS A PERCENTAGE OF APPROPRIATIONS OF STATE TAX FUNDS FOR OPERATING EXPENSES OF HIGHER EDUCATION IN 1987-88, ARIZONA AND COMPARABLE STATES*

STATE/RANKING	PERCENT	STATE/RANKING	TOTAL STATE GRANT APPROPRIATIONS	STATE/RANKING	TOTAL STATE TAX FUNDS FOR HIGHER ED.
9. IOWA	7.07%	15. IOWA	$31,231,000	25. ARIZONA	$491,912,000
15. OKLAHOMA	4.64%	19. COLORADO	18,556,000	26. IOWA	441,458,000
18. COLORADO	4.21%	20. OKLAHOMA	17,919,000	27. COLORADO	441,021,000
23. OREGON	2.89%	28. OREGON	10,121,000	29. OKLAHOMA	386,266,000
39. ARIZONA	.66%	35. ARIZONA	3,254,000	32. OREGON	349,939,000
national average	5.20%	national average	35,437,000	national average	680,841,000

* Comparability based on state population, tax funds, and appropriations to higher education

** Number indicates ranking in the fifty states

SOURCE: Reeher, K. R. and Davis, J. S. 19th. Annual Survey Report, 1987-88 Academic Year.
National Association of State Scholarship and Grant Programs, January 1988.

TABLE 4
EEC TASK FORCE SURVEY OF PRODUCTIVITY AND PERFORMANCE
FISCAL YEAR 1988

UNIVERSITY	ENROLLMENT	EXPENDITURE AUTHORITY	STATE FUNDED WAIVERS/SCHOL	STATE APPROPRIATED FIN. AID PAYMENTS	FEDERAL GRANTS PAYMENTS
ARIZONA STATE UNIVERSITY	41,169	$199,144,800	$10,587,500	$ 211,100	$12,541,100
SAN DIEGO STATE UNIVERSITY	36,280	178,586,730	120,045	2,739,533	7,238,989
UNIVERSITY OF ARIZONA	32,857	258,067,400*	10,159,700	173,900	4,916,000
UNIVERSITY OF UTAH	24,134	149,677,500	4,323,600	386,000	5,500,000
NORTH TEXAS STATE UNIVERSITY	22,380	101,155,149	2,450,000	1,200,000	3,000,000
UNIVERSITY OF OREGON	17,696	88,422,632	675,229	1,400,000	11,000,000
OREGON STATE UNIVERSITY	15,199	138,777,286	537,245	1,430,000	10,000,000
UNIVERSITY OF TEXAS EL PASO	14,053	63,686,263	55,733	1,360,473	3,273,500
NORTHERN ARIZONA UNIVERSITY	13,445	66,903,300	3,274,200	176,500	5,235,500
WEBER STATE UNIVERSITY	12,002	40,634,200	857,900	180,259	1,254,101
MONTANA STATE UNIVERSITY	9,878	43,123,100	1,045,530	275,000	5,300,000
UNIVERSITY OF IDAHO	9,032	69,737,600	NA	145,510	3,300,000
NORTHERN COLORADO UNIVERSITY	8,675	39,188,739	NA	2,449,458	2,407,571
IDAHO STATE UNIVERSITY	7,358	43,887,000	1,306,400	45,500	9,500,000

*includes College of Medicine

NA=not available

TABLE 5

STATE FUNDED INSTITUTIONAL SCHOLARSHIPS AND WAIVERS, 1986-87

Type	ASU Number	Amount	NAU Percent	Number	Amount	Percent	Number	Amount	Percent
ACADEMIC	2589	$4,054,000	47%	507	$ 0575,633	21%	2485	$3,261,052	38%
ATHLETIC	336	$1,168,000	14%	364	$ 609,630	22%	326	$ 935,642	11%
FACULTY/STAFF DEFENDENT WAIVERS	1418	$1,004,000	12%	855	$ 476,106	%17	2011	$1,261,992	15%
OTHER:	883	$2,368,100	26%	625	$1,062,803	%39	1094	$3,142,720	37%
Special Need Waivers Activity Waivers Graduate Assistantships W.I.C.H.E. Sponsored Projects etc.									

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* average headcount per semester for Fiscal Year 1987

** indicate amounts that represent budget funding revenue only

SOURCE: Arizona State University, Northern Arizona University,
and University of Arizona Legislative Budget Requests for 1989

MINORITY EDUCATION IN ARIZONA'S UNIVERSITIES

JOHN J. WOOD

INTRODUCTION

ISSUES IN MINORITY EDUCATION

More than a third of Arizona's public school students during the 1986-87 fiscal year were ethnic minorities; the percentage of minority children in kindergarten and the first grade approached forty percent. Yet, there are losses of minority students from the 9th grade to graduation of over forty percent, compared with losses of nearly a third of the majority students. Community college enrollments are relatively close to estimates of the percentage of minority high school graduates, but minority students are underrepresented in university enrollments, and among university graduates.

Arizona's future depends upon how the state responds to the educational needs of its rapidly changing citizenry. The current loss of human potential is unacceptable. The Jeffersonian ideal of an educated citizenry as the basis for self-rule and democratic participation is endangered, as is the more utilitarian ideal of the "greatest good for the greatest number" (Strike 1985).

Changing the pattern of educational achievement is vital to the future of Arizona, for reasons of economic prosperity and social stability, as well as for reasons of equity.

Meaningful progress in changing the pattern of educational achievement will require a state-wide comprehensive, integrated, and unified plan for minority education. The universities have a vital role to play in such a plan, especially in community, community college, and public school outreach, and in recruiting and graduating minority students.

PURPOSE OF STUDY

The primary objectives of this paper are to communicate my understanding and evaluation of Arizona universities' efforts to recruit and graduate minority students, and to offer suggestions for improving minority student access and persistence. It focuses on current outcomes and recent trends, and the general strengths and limitations of current efforts.

The strengths and weaknesses of current efforts to recruit and retain minority students, and current outcomes and recent trends are discussed in four sections:

1) administrative policy making and the organization of minority education;

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2) recruiting and enrollment management;

3) retention; and

4) role models.

Administrative policy making and the organization of minority education, and role models are highlighted; the former because policy and organization provide coherence and focus for recruiting and retention, and the latter to remind readers that minority faculty, staff, and administrators are important role models and not simply equal opportunity, affirmative action goals.

METHODS AND LIMITATIONS

Primary data for this study come from several sources: personal interviews, narrative questionnaires, and summary statistics. The recent literature on minority student recruitment and retention provides the larger context and information concerning effective programs, policies, and attitudes. This literature is summarized and annotated in Cowart, Wood, and Cotera (1988).

Some statistical data were provided by the universities in response to requests from the Task Force staff. Most of these data are summarized in a report by Cotera (1987). Bartram and Gebel's (1988) comprehensive environmental scan is an invaluable source for assessing current outcomes and trends. A student survey conducted on each campus during the spring semester, 1988 is discussed in Cotera (1988). Minority recruitment and retention reports and affirmative action reports by the universities to the Board of Regents provided helpful information, as did members of the Board of Regents staff.

I conducted personal, open-ended interviews with minority students, faculty, and staff, and minority and non-minority administrators in January, February, and March, 1988. Themes from these interviews are considered in detail in Wood (1988). I also met with administrators in each of the universities for brief interviews and to introduce a narrative questionnaire.

The questionnaire is a slight modification of the American Council on Education's "Framework for Evaluating Institutional Commitment to Minorities: a Guide to Institutional Self-Study" (American Council on Education 1976). The questions cover eight principal institutional sectors:

1) Admissions;

2) Financial Aid;

3) Counseling, Educational Support, Advising and Placement;

4) Academic Affairs;

5) Student Affairs;

6) Graduate and Professional Schools;

7) Affirmative Action; and

8) Central Administration (See Appendix A).

Select administrators were asked to provide responses in their area of responsibility.

It was difficult, and in some cases impossible, to obtain comparable data for all three universities. The universities present and, evidently, collect data in different formats, and some data are simply not readily available. That is why data are presented for some universities and not others in this report, and why sometimes the years chosen for analysis are inconsistent. Also, a few administrators did not respond to the questionnaire, so there are some unavoidable gaps in those data too.

The major limitation of the study is a lack of strict comparability among the three universities for all issues. I also had neither the time nor the resources to conduct a thorough evaluation of every program in each university (ASU alone recently enumerated 60 programs). Nevertheless, there are enough data available to identify where the primary problems lie and to suggest what might be done about them.

ELEMENTS OF SUCCESSFUL MINORITY EDUCATION PROGRAMS

There are many reasons why minority students do not attend universities at the same rate as non-minority students. The most important reasons are:

1. inadequate preparation in basic academic skills;
2. underrepresentation in college preparatory programs;
3. higher priorities for other opportunities, needs, and obligations;
4. limited socialization for going to college by family and peers;
5. difficulties in applying for financial aid, and the discouraging prospect of financial indebtedness.

Minority recruitment, in order to be successful, must incorporate pro-active strategies for addressing the reasons why many minority students do not attend universities. For example, some strategies that address the reasons cited above include:

1. kindergarten through 12th grade outreach, and pre-college activities;
2. information and recruitment activities aimed at parents;
3. recruitment activities tailored to specific minority populations and high school locations;
4. efforts to involve employers, community agencies and community organizations.

Many of the reasons for dropping out or stopping out of college are the same as the reasons for not attending college. Retention programs must address these factors also, but in a new context that includes the university environment. Optimal retention of minority students demands university-wide commitment, reflected in:

1. strong and visible support by the president and central administration;
2. funding priority;
3. effective programming in the non-academic component of student development;
4. involvement of faculty in the academic and professional aspects of student development, such as tutoring, advising, mentoring, and developmental courses;

5. strategic placement of programs in terms of reporting, responsibility, and authority;
6. sensitivity to cultural differences and a university environment that welcomes minority students;
7. adequate representation of minority faculty, professional staff, and administrators.

Minority education is a function of an entire university, not just student services, where most programs are typically located. Minority education is very much an academic issue. Universities have to involve faculty in significant ways, and academic programming has to be responsive to minority student needs. Efforts to improve minority education must be coordinated, not fragmented. Universities can usually enumerate large numbers of programs that are designed to enhance minority student recruitment and retention, but most are not evaluated for effectiveness, and there is, typically, no coordinated, university-wide effort, or accountability.

A model plan, that incorporates many of the elements of successful minority recruitment and retention programs, has been proposed recently by the University of Wisconsin-Madison (University of Wisconsin-Madison 1988). "The Madison Plan" was developed in consultation with students, faculty, staff, administrators, and community members, thus it is represents the university community in its widest sense.

Its key features are: a commitment to the value of ethnic diversity in achieving excellence in liberal education; coherence and focus; outreach; specific goals and objectives; a timetable for implementation; and the identification of administrators responsible for each program (See Appendix B).

ADMINISTRATIVE POLICY MAKING AND THE ORGANIZATION OF MINORITY EDUCATION

INTRODUCTION

Administrative policies are courses of action adopted and pursued by a university administration. A policy statement is just that; it becomes a policy when it is adopted and pursued. Policy making is a collective activity that requires an awareness of the issues that the policy will impact, and reliable information about the institution and its environment; information to insure that the participants are talking about the same thing, and information for making choices. Policy implementation must insure that action serves policy, by addressing the issues of organization and funding. The principal organizational question is: What is the most effective coordination of sustained effort in the service of the policy? The principal funding question is: What distribution of resources will guarantee sustained effort in the service of the policy? Finally, policies must be regularly reviewed to assess their impact, and to change course if necessary.

Policy making and implementation take place in universities within a well-defined context. Most universities partition the set of institutional activities into a number of hierarchical levels, resulting in a tree-like formal organization. Partitioning leads to horizontal independence; and jurisdictional questions and domain protection arise because the partitions become units of accountability and resource distribution. This leads to the establishment of alternative organizations, such as committees, task forces and study groups, when there are problems that interest more than one partition.

What are the major administrative policies that affect minority student recruitment and retention in Arizona's universities, and, how are they implemented? One section of the "Framework" questionnaire, Section VIII, was designed to provide some general answers to these important questions, although its focus is on equal opportunity. Interviews on the three campuses supplied some additional insights. Unfortunately, the University of Arizona did not respond to this set of "Framework" questions.

NORTHERN ARIZONA UNIVERSITY

President Hughes has made public policy statements concerning the importance of minority education at NAU on numerous occasions. His central staff believe that he is committed to addressing minority concerns, and they indicate that: "The leadership of NAU has a clear understanding of minority issues as they relate to both present conditions and future directions of the institution." Commitment and awareness of the issues are the starting points for good policy making.

The management information system at NAU needs improvement. A strong institutional research group and a developed student database are relatively recent at NAU: consequently, there are gaps in information on minority students, especially trend information. There are recent efforts to correct the situation; work by the admissions office is exemplary in this regard.

Institutional research seems to be addressing important categories of information related to minority concerns, and the differences between groups are recognized. Task Forces and informal consultation are the principal means of soliciting advice from minorities regarding these concerns. There are some regular reports generated, but the overall impression given by responses to the questionnaire is that much reporting is ad hoc.

NAU has multiple linkages with the minority communities it serves, primarily of an instructional nature. But there are no formal mechanisms for obtaining advice from communities that could help in formulating policy.

The organization of minority education at NAU is self-described as a "decentralized administrative model." This means is that programs are administered through existing administrative structures. And, most programs are administered through Student Services. There is no centrally coordinated, university wide program of minority education. NAU reports that there are twelve minority faculty and staff in "high level administrative positions," of whom two have ready access to the President, and, by sitting on the President's Council, the latter have some influence on administrative policy.

Reallocation of the continuing budget provides the major source of funds for policy implementation, although Program Change requests have assisted the development of some minority education programs at NAU in the past. External funding is also sought. It is not clear if there are overall priority budget set asides in support of administrative policy implementation in minority education.

The Affirmative Action Office tracks minority representation; there are annual performance reviews that provide data; and task forces are convened and special studies are conducted to review the status of minority participation. However, there are no comprehensive, regular policy reviews of minority participation in the entire institution.

ARIZONA STATE UNIVERSITY

President Nelson's strong support for minority education programming and equal opportunity goals is evident in policy statements to the faculty and staff, and in presentations before the public. In my interviews with administrators at ASU, it was clear that the President's message is understood. The President has excellent opportunities to become aware of the issues that impact policy through his periodic meetings with minority faculty and staff groups on campus, and his Minority Affairs Council, which includes representatives from the service community.

The Admissions Office, the Office of Institutional Analysis, and the Affirmative Action Office collect appropriate data, analyze it, and distribute information for policy making when and where it is needed. Periodic retention studies are conducted, a detailed Human Resources Report is prepared and disseminated by the Affirmative Action Office, and enrollment reports are prepared and reviewed each semester. Minority advice is solicited, and there are attempts to be sensitive to the distinctive concerns of different minority groups. Apparently, there has been no comprehensive, regular review of minority education policy at ASU. There is a detailed study currently underway by the Morrison Institute for Public Policy that promises to serve as a good baseline for a regular, comprehensive policy review. There are more than a dozen examples of interchange between institutional personnel and representatives of minority communities reported in the response to the "Framework" questionnaire. They cover a wide range of activities and include formal as well as ad hoc groups. The potential for policy impact from ASU's environment is great, but the interchange is dispersed throughout the university without any formal mechanisms for coordinating and evaluating it institution-wide.

A recent study has identified 60 programs that "support the academic achievements of minority students." Some of the programs are designed for all students, and some are focused on minority achievement. The programs are placed throughout the university depending upon: "function, availability of resources, needs of both students served and program developer, funding source, intercollegiate or departmental relationships, and external regulations."

The funding is stable for some programs, and not for others. The primary organizational emphasis on minority student development is in Student Affairs. Like NAU, there is no centrally coordinated, university wide program of minority education at ASU. In personal interviews, administrators describe the organization as "decentralized".

There are 41 minority administrators at the level of department chair or assistant director and above at ASU. Through their positions and their personal influence, they can have a significant impact on minority education policy. Access to the President is via an open-door policy, periodic meetings with minority faculty and staff groups, and the

President's Minority Affairs Council.

Most funding that directly or indirectly influences equal opportunity objectives at ASU comes from the continuing budget, thus funding is relatively stable. Some programs are supported by other funding sources. Most equal opportunity activities are not directly related to specific budget items; it is said that equal opportunity goals and objectives affect expenditures in many categories in many ways. High priority is given to equal opportunity goals. "Many of the specific goals are not budget-driven, but rather are statements and commitments to action through normal hiring processes and through student recruitment, retention, and related activities." ASU strongly emphasizes student services in its minority affairs thrust, although funding through a Program Change request is being sought for advising and instructional activities.

UNIVERSITY OF ARIZONA

As mentioned above, the University of Arizona did not respond to the "Framework" questions on administrative policy and organization, so I am limited to a few, brief comments based on observation and interviews.

President Koffler publicly supports equal opportunity goals and minority education goals. The clearest policy results are in the area of Student Affairs, where remarkable changes in organization and programming have taken place within the last few years. There is less evidence of minority education policy in the Academic Affairs segment of the university. Like NAU and ASU, there is no centrally coordinated, university wide program of minority education at UA.

The organization of minority recruitment and retention at UA is basically decentralized. Most programs are administered through existing administrative structures, although minority affairs has a much higher profile in Student Affairs at UA than at ASU and NAU.

CONCLUSIONS

The starting points for good policy in minority education are commitment and an awareness of issues. The university presidents have made policy statements in support of minority education at their institutions, and the available evidence indicates that their messages have been received. There also have been ample opportunities for policy makers to become aware of the issues. The universities have good policy statements, but their policies in minority education are not as coherent or focused as they could or should be. There are several ways that minority education policies can be developed so that they provide coherence and focus.

First, policy makers must have reliable information about the university and its environment. There is room for improvement, but the information systems at all three universities can provide good information if policy makers make it clear what they need and when they need it. Perhaps the most crucial kinds of information are regular evaluations of the effectiveness of minority education programs. Also, some formal means of soliciting community advice on policy is essential.

Second, there must be effective coordination of sustained effort in the service of the policies. The major organizational deficit in Arizona's universities is the lack of centrally coordinated, university wide programs of minority education. There are numerous examples in my interviews and in the questionnaire responses discussed above of problems attending the horizontal independence of programs and activities. One of the most pervasive problems is the division, at some point in the administrative hierarchy, of Student Affairs and Academic Affairs. Student Affairs has the major responsibility for minority affairs in Arizona's universities. Minority education is very much an academic concern, and effective coordination must include the academic component of the universities, prominently.

Third, the distribution of resources must guarantee sustained effort in the service of the policies. Most funding for minority education programs comes from the continuing budget. New or enhanced programs must be funded through reallocation of resources, Program Change requests, or from external sources. Given the universities' histories and missions, only so much reallocation can take place before other vital functions of the universities are curtailed.

Decentralization has been the obvious answer to the problem; programs can be added to or incorporated within existing administrative structures without major reallocations of resources. But energies and funds become dispersed in a decentralized system, and overall accountability becomes a problem. Minority education goals and objectives affect expenditures in many ways, but it is difficult to make the goals and objectives budget-driven.

In order for the distribution of resources to guarantee sustained, effective effort, policy goals and objectives must be budget-driven. Given existing constraints, some mix of decentralization and centralization that combines the best features of both is the ideal way to implement minority education policies in Arizona's universities. It is possible, for example, to centralize coordination and decentralize activities.

Fourth, and finally, policies must be reviewed frequently. Policy makers have to be responsive to environmental changes, realize when programs are not working, and be prepared to change directions and emphases.

RECRUITING AND ENROLLMENT MANAGEMENT

INTRODUCTION

Recruiting and enrollment management are access policy in action. These two functions are leading contributors to the composition of a university's student body; consequently, they can play a major role in reducing underrepresentation of minority students.

There are several ways of measuring underrepresentation, each with a slightly different emphasis. Richardson and Bender (1987:5) list three common approaches:

First, and perhaps most common, underrepresentation is measured by comparing the percentage of minority students enrolled with the percentages of minorities in the state's population. This approach emphasizes equity in the broadest sense, but it does not directly address the educational system.

Second, the percentages of "qualified" minority students among the state's high school graduates and community college transfers are compared with the percentages of minorities in the student body. Qualification is a function of enrollment management strategies, and admissions standards. This approach addresses the educational system, but it does not reflect the necessary linkages among the educational system's components. The universities set the standards and manage enrollment, and the public schools and community colleges are expected to respond by producing qualified students.

A **third** way of measuring underrepresentation is to compare the proportion of minority students graduating from high schools in a university's primary service area with their representation in the student body.

This approach explicitly recognizes important linkages with the public school sector of the educational system; it would require a university to work with public schools to foster academic achievement and to assume some responsibility for developmental work. It does not address community college linkages.

The three ways of measuring minority underrepresentation imply different mixes of strategies for reducing the degree of minority underrepresentation. Richardson and Bender (1987:5) identify three specific strategies in their research data. In the "traditional" strategy a university simply competes for a limited pool of minority graduates. The "mediation" strategy emphasizes the first strategy plus bridge programs and academic support services. The third strategy, "intervention", involves expanding the pool of minority candidates by working with public schools and community colleges. The first two measurement approaches imply some mix of "traditional" and "mediation" strategies, although measuring underrepresentation in these ways would not preclude "intervention". In the third measurement approach, "intervention" is most important, but not to the exclusion of "mediation".

As stated previously, meaningful progress in changing the pattern of educational achievement in Arizona will require a state-wide comprehensive, integrated, and unified plan for minority education. Arizona's universities are four year, state funded institutions, with lower division programs; therefore, they have an obligation to be responsive to the state's high school graduates. For these two reasons, I suggest that minority student underrepesentation in Arizona's universities be measured by comparing the combined freshman class enrollment with the percentage of Arizona minority high school graduates.

I suggest the freshman class for comparison, because that is the primary access point for lower division work. The Arizona universities have different but complementary missions; they have different campus environments; and they have different primary state service areas (with some overlap). A combined enrollment measure encourages the universities to pool resources and to work together to find the best fit of students and university, and it recognizes the existence of different primary service areas with different ethnic compositions. Recruiting and enrollment strategies that work best within this framework are intervention strategies, with mediation.

Enhancing community college transfer must be part of a state wide minority education plan, and comparisons of university enrollments, especially upper division enrollments, with community college enrollments are important supplementary indicators of progress in reducing minority student underepresentation in the universities.

OUTCOMES

Recruiting and enrollment management strategies for minority students in the three universities are basically mediation strategies. The universities are competing for a limited pool of "qualified" minority students, and for mediation they are mostly using bridge programs and academic support services located in student affairs. There are a few notable exceptions, including some intervention programs designed to expand the pool of minority students by working with community colleges and public schools.

Outcomes of past and current recruiting and enrollment strategies are discussed in four sections: Arizona High School Service Areas; The Minority Student Recruitment Pool; Current Enrollment and Trends; and Underrepresentation.

Arizona High School Service Areas

The universities have different primary state service areas, defined as counties of origin of Arizona high school graduates that account for at least 75 percent of their total Arizona high school enrollment (Table 1). Arizona State University draws almost 90 percent of its Arizona high school graduates from Maricopa county. Fifty percent of the University of Arizona's Arizona high school graduates are from Pima county, but a large share is also from Maricopa county. Northern Arizona University serves a wider range of areas in the state, including "rural" counties, but Maricopa county is the single largest provider of Arizona high school students.

In 1984, NAU had the highest percentage of new students who were freshman Arizona residents, followed closely by UA. Only 56 percent of ASU's new students were freshman Arizona residents. The lower figures for ASU are the result of larger percentages of new out of state students and transfer students.

The Minority Student Recruitment Pool

Minority student enrollment in Arizona's public school primary grades averages between 35 and 40 percent. Therefore, it is likely that the ethnic composition of Arizona's public high school graduating class in the near future will reflect a higher percentage of minority students, even if current enrollment losses continue. But the rate of change will vary by region within the state (Figure 1). Maricopa and Pima counties have the largest numbers of public school students; however, the lowest percentages of minority public school enrollment are in Maricopa county, and the highest percentages are in Pima county and in the non-urban counties of the state.

These enrollment patterns have important implications for recruiting. For example, the ethnic composition of the recruitment pool for UA and NAU will change more rapidly than for ASU, if current primary state service areas persist. A comparison of estimated minority high school graduates shows that the numbers of graduates by ethnicity also vary considerably by region (Figure 2). The largest numbers of minority graduates throughout Arizona are Hispanics. In the non-urban counties, though, the number of Hispanics is almost matched by the number of American Indian graduates.

Maricopa county has the largest number of Black and Asian high school graduates.

Current Enrollment and Trends

Current enrollments of minority students in NAU, ASU, and UA reflect the relative ethnic composition of their primary service areas, as should be expected, but, there are discrepancies in the overall percentages of university minority students and the overall percentages of minority high school graduates (Table 2).

The aggregate state community college enrollments are a better match with estimated high school graduation statistics.

The percentage of American Indians at NAU duplicates the percentage of American Indian high school graduates, and the enrollments of Asians at ASU and UA are proportionately higher than the high school estimate. Otherwise, there is a rather large divergence in percent enrollment.

The past five years, from 1983 through 1987, have seen a general increase in university enrollments in Arizona, and each university showed a positive increase in minority headcount enrollment for each ethnic group (Table 3).

However, the changes in percent of total headcount are not impressive. For some ethnic groups in some universities, there was no change, and in one university there were decreases for two ethnic groups. The percent changes in aggregate Hispanic and Asian enrollments were the largest increases, respectively 1.9 percent and 1.5 percent. For assessing outcomes, this five year period is significant, since it covers the initial implementation phase of the Arizona Board of Regents' minority recruitment and retention policy based upon the recommendations of "The Arizona Universities' Study Group on Minority Student Recruitment and Retention."

Underrepresentation

Previously, I have argued for using a comparison of Arizona minority high school graduation and combined university freshman class enrollments as a measure of representation, or, conversely, underrepresentation. To reiterate the basic argument: The comparison emphasizes the necessary continuity between the public schools and the public universities, and their shared responsibility for educating Arizona's youth. And, it bears a closer relationship to the potential university recruitment pool than would comparisons with the population at large. A combined university enrollment comparison recognizes the differences in each university's ambience, mission and primary service area, and, ideally, combining enrollment for accountability would encourage cooperation in finding the best fit of student and university.

Table 4 presents recent comparable data for headcount enrollment for the freshman class of 1986. There is better agreement between percent enrollment by ethnicity in the freshman classes and the percentages of estimated high school graduates than between overall headcount university enrollment and the latter. The better agreement is probably a reflection of enhanced minority recruitment programs in all three universities over the past two to three years. The overall headcount university enrollment figures are also diminished by poor retention for most ethnic groups. Table 5 contrasts the combined freshman class for 1986 and an estimate of high school graduates from the previous year. The purpose of the contrast is to assess the representation of each ethnic group, and to suggest rough target numbers of students for parity for underrepresented groups.

Freshman enrollment for American Indians would have to be increased by a factor of three for parity, and freshman enrollment for Hispanics would have to be increased by a factor of about 2.4. Blacks are close to parity, and Asians and Whites are adequately represented. The target numbers are "rough" because university students do not comply 100 percent with ethnicity questions, and we do not know the precise numbers of high school graduates by ethnicity in the state. It is impossible to improve upon these estimates at present.

However, the freshman class enrollment estimates could be made more relevant by comparing the most recent enrollments of Arizona residents.

THE ACCESS ENVIRONMENT

The traditional role of universities in enhancing minority access has been to compete for a limited pool of potential students through refining recruiting and developing enrollment management strategies. Mediation, student development and university preparation through bridge program and academic support services, and intervention, working with public schools and community colleges to strengthen preparation and to encourage interest in attending a university, are recent improvements. Arizona's universities are in the process of refining minority recruitment; developing, expanding or enhancing mediation programs; and enhancing or beginning some intervention programs.

Many of these improvements are new. All three universities now have summer bridge programs, and other developmental programs to assist students in the transition to university life and curricula. The University of Arizona's "APEX (Academic Preparation for Excellence)" program, Arizona State University's "2+2+2" program and its new "Project Prime", and Northern Arizona University's "Macy Foundation Project" are all excellent examples of intervention's potential for increasing minority access.

The universities' "traditional" access environment is presented in two parts: The first addresses current undergraduate recruitment and admissions, and the second reviews some of the same issues in graduate and professional colleges. The data for these discussions are responses to the Framework questionnaire, and notes from personal interviews and observations.

Undergraduate Recruitment and Admissions

The Framework questions on undergraduate recruitment deal with how minority candidates are identified; the relationships among high school counselors and recruiting personnel; recruiting efforts for specific disciplines; and with recruiting materials that portray the image of the university (Appendix A). Admissions questions cover skill and experience of personnel; flexibility of admissions criteria; and comparisons of standard admissions with high risk admissions. Finally, there is a question on outcomes.

These questions were directed to the chief admissions officers. I also conducted informal interviews with the three chief admissions officers, with the Director of Minority Recruitment at ASU, Office of Minority Student Affairs personnel at UA, and personnel in the Multicultural Center at NAU. I received no formal response to the Framework questions on undergraduate admissions and recruitment from ASU, but I obtained some comparable information from the informal interviews. Recruitment and admissions issues are discussed separately, following a brief overview of the organization of undergraduate minority recruitment at ASU, UA, and NAU.

Minority recruitment at UA, ASU, and NAU requires cooperation between the admissions offices and special minority affairs components of student affairs. At ASU, there is a separate office of minority student recruitment that does not report to the admissions office. At UA, minority recruiters function out of the Office of Minority Student Affairs, in cooperation with the admissions office. Northern Arizona University's minority recruiting is administered by the admissions office, with recruiting teams that are more widely based, including personnel from the Multicultural Center.

All three universities have specific Arizona high schools and community colleges with high minority enrollments that recruiters visit on a regular basis, usually once a month, to identify minority candidates for admission and to provide information and assistance. Peer recruiters are commonly used for these visits. Other methods of identifying minority persons who might be interested in attending one of the universities include direct mailings, summer institutes, public school outreach, and on-campus information or admissions days. The latter involve both students and parents. On-campus programs that target specific ethnic groups are relatively recent. Northern Arizona University is currently experimenting with programs on reservations.

Admissions officers believe that recruiting programs are, or will be, successful. The University of Arizona, for example, reports that more than 60 percent of the new minority students in the Fall 1987 freshman class are from their 30 target schools.

Inadequate high school counseling was mentioned as a barrier to access in interviews with students and some recruiting staff (Wood 1988). Northern Arizona University and the University of Arizona both report efforts to develop good working relationships with counselors. The University of Arizona's Office of Minority Affairs and counselors in their target schools sign contracts detailing the nature of their relationship. At NAU, there is a special on-campus program for counselors once a year, and counselors are invited to participate, at the university's expense, in on-campus orientation and information days. Both consider regular, consistent contact important for developing and maintaining good working relationships.

All three universities refer information on applicants to academic units for follow-up. Journalism and Engineering at NAU have specific minority recruiting efforts. Many colleges and programs at UA and ASU are involved in minority access, either through recruiting or pre-college preparation. All three also are sensitive to the need for recruiting materials to accurately portray minority life on campus, and involve members of "target audiences" in production and review of materials.

The Arizona Board of Regents sets admissions standards for Arizona's public universities, and, of course, those students who meet the standards are admitted. Current Arizona admissions standards are relatively flexible. But, sensitivity to the backgrounds, needs, and interests of minority students, and flexibility are especially important in deciding upon admission by exception, or conditional admission. At NAU, applications that do not meet the standards are reviewed by the Admissions Review Committe. The Admissions Review Committee has minority faculty representation. The University of Arizona admissions staff are said to be "a culturally diverse and well-trained staff of individuals who demonstrate sensitivity to the needs of minority students." Departments and colleges may have additional entrance requirements. This issue was not addressed specifically in the Framework questionnaire, but interviews I took with students and faculty suggest that similar sensitivity is needed in considering admission to programs within the universities.

The University of Arizona reports that: "At this time, all resident minority students are admitted through standard practices." They have just begun to identify high risk non-resident students, and the practices do not yet apply to resident students. At Northern Arizona University, "With the new admissions standards implemented statewide in Fall 1987, there was a significant increase in the number of minority students admitted by exception." NAU and UA note some gains in increasing the pool of admissible minority students through aggressive recruiting practices, but they recognize the need to work for more minority representation in their institutions.

Graduate and Professional Colleges

Minority accessibility to graduate and professional programs is important for increasing the representation of minority professionals in society, and for increasing higher education faculty, professional staff, and administrative recruitment pools. Questions about graduate programs were directed to the graduate deans. Professional colleges were defined as the Colleges of Law at ASU and UA, and the Colleges of Pharmacy and Medicine at UA, and questions were directed to representatives of each college.

Graduate college minority student enrollments for the Fall 1987 semester range from 9.1 percent at ASU to 11.6 percent at UA, with NAU falling nearly halfway between at 10.7 percent, based on information in the Arizona Board of Regents Minority Recruitment & Retention Report for 1987. The enrollment figures in this report for UA do not correlate with other information; they may be FTE (Full-time equivalents) rather than headcount, so the conclusions for that institution are tentative.

The relative frequencies of each ethnic group closely mirror those for Arizona university enrollments in general. Professional college minority enrollments are higher than graduate college minority enrollments at UA and ASU. The minority enrollments in ASU's College of Law and UA's College of Medicine are particularly noteworthy.

Graduate and professional college recruiting and admissions are much more a function of specific programs, departments, and colleges than undergraduate admissions and recruiting. Selection criteria at the postgraduate level are more specific from the perspective of both students and faculties. Consequently, graduate colleges typically play a coordinating role, and professional colleges usually have their own recruiting and admissions procedures and personnel. The general response to the Framework questions on this topic for the College of Law at ASU were included with ASU's general Graduate College response; each of the professional schools at the University of Arizona provided separate responses. Arizona State University's College of Law contributed additional information, specific to its program. Minority graduate student recruiting and admissions are considered first.

Identification and recruiting of minority students for graduate work differ widely in approach, interest, and intensity in the specific graduate programs in each of the universities. Some programs have active identification and recruitment programs that involve recruiting trips, others simply rely upon lists of potential minority applicants that the graduate colleges send them periodically. Arizona State University and the University of Arizona report that they are giving careful consideration to developing a system for identifying and tracking minority recruitment activities in their universities to provide needed information to students and departments, and to monitor the process for possible intervention.

National, regional, and professional minority locator lists and services are used for identification in each university. The graduate colleges usually sponsor the services, send information materials to persons on the lists, and refer names to departments for follow-up. Arizona's universities also participate in two intervention programs for encouraging minority students to apply to graduate school. The "Consortium for Graduate Opportunities for American Indians" is centered at NAU, and the University of Arizona is also one of the 15 participating institutions. Arizona State University is not a member of the consortium. "Project 1000: Admitting an Additional 1000 U.S. Hispanic Students into Graduate School" is coordinated at ASU; the University of Arizona participates in the program, but Northern Arizona University does not.

The graduate colleges do not emphasize building minority attendance in specific departments, but they do offer recruitment incentives, and support programs that are trying to recruit and admit minority students. They all apply for grants and fellowships to support graduate work for minorities, for example. In addition, at NAU "the Graduate Dean has required that 10 to 20% (depending on the Department) of the assistantships must go to minority students or the funds will not be available to that Department." At UA last year, the Graduate College awarded 17 fellowships to minority students; "the Graduate College [also] awards 50 fellowships to the departments and 30 to the deans. Efforts are currently underway to encourage deans and department heads to award some of these fellowships to minority students particularly for recruitment purposes." Recruitment incentives at ASU include: Regents Tuition and Academic Scholarship set-asides for minority and underrepresented groups; application fee waivers; and "Once an academic program identifies an admissible applicant, the Graduate College will pay for a campus visit by the prospective student."

The graduate colleges set minimum standards for admissions at ASU, UA, and NAU. Departments may set their own standards in addition. Each graduate college has admissions flexibility, through provisional status or non-degree study, or written justification by departments. For example, at the University of Arizona, each department is allowed a 15 percent admissions exception to their grade point average requirement. The respondents from the graduate colleges indicated either directly or indirectly that they do not perceive admissions requirements to be a major barrier to minority recruitment in their institutions. The ASU response, however, called attention to the observation that minority students who are close to meeting published standards may not apply because they do not know that exceptions can be made.

The professional colleges -- law, medicine, and pharmacy -- have relatively high minority enrollments. It is possible that professional schools are more attractive to minority students than is general graduate study. In the case of the Colleges of Law, though, a large part of their success in enrolling minority students is undoubtedly the direct result of clearly defined minority education goals and policies, aggressive recruiting activities, including an emphasis on follow-up and personal contact, and their consideration of a wide range of indicators of potential success in admissions decisions. I have no specific information on the College of Medicine's recruiting activities. The College of Pharmacy reports an emphasis on minority access, but they have no specific procedures for identifying prospective minority students, other than the facilities available to all colleges at the University of Arizona.

Arizona State University's College of Law has an "affirmative action admissions policy". The college has a goal of 20 percent minority student enrollment, which they are close to achieving (Fall 1987 enrollment was 16.2 percent). The University of Arizona's College of Law realized substantial increases in minority student applicants and enrollees last year, and, while the college reports no specific enrollment goals, they are committed to enrollment diversity. Both colleges give minority students special consideration in admissions and financial aid. Both also participate in and initiate an extremely wide range of recruiting activities.

Policies, procedures, financial commitment, and outcomes clearly indicate that minority education is a high priority for Arizona's Colleges of Law. I have little information upon which to base an evaluation of the College of Medicine's and the College of Pharmacy's priorities, other than their significant percentages of minority students (based on tentative data).

CONCLUSIONS

Minority student access to Arizona's universities must be improved, particularly for Hispanics and American Indians. The recognition that successful recruiting and enrollment management aimed at increasing minority student access to university education requires communication, cooperation, and coordination among all segments of the educational community is the necessary foundation for appropriate action.

Postgraduate access is related to undergraduate access and persistence, which is, in turn, related to public school persistence and preparation.

The universities need to further develop their intervention strategies and partnerships with public schools, community colleges, and each other, in recognition of their responsibilities in the educational "stream". Positive change will be very difficult if the attitude that "the major problems of minority access are outside of our control" persists. There are several examples of promising programs that are already in place, or in the planning stages, in Arizona's universities. For example, "Project Prime", co-directed by persons from ASU, the Educational Testing Service, and the College Board, is based upon a careful national study of successful intervention programs, thus it has a good chance of succeeding in Arizona. The University of Arizona's APEX program, mentioned earlier, is in place and producing results. Other early intervention models may be found in a new book by Theodore L. Gross (1988), entitled "Partners in Education: How Colleges Can Work with Schools to Improve Teaching and Learning". Intervention models are also important for postgraduate access, and, as mentioned previously, Arizona's universities participate in two such programs.

Identifying potential minority student applicants and getting them admitted, enrolled, and prepared for success are enhanced by communication, cooperation, and coordination among student services programs and academic units within each university. Each university needs an inventory of recruitment programs and a recruitment and admissions tracking network to facilitate communication, cooperation, and coordination among the programs. Each university also needs to evaluate the placement of university-based minority recruiting in terms of reporting, responsibility, and authority to insure the most effective use of talents and resources. Mediation programs that are designed to prepare students for success should be coupled with entry level assessment, and carefully coordinated, monitored, and evaluated. Budgeting for recruiting within academic units should be encouraged and supported, if these activities are coordinated within the university.

Recruiting methods at each of the three universities are designed well and are working. Recruiting needs to become even more aggressive, though; the Colleges of Law provide good examples of the results of traditional, but aggressive, recruiting techniques. Information and recruitment activities aimed at parents, recruitment activities tailored to specific minority populations and high school locations, and efforts to involve employers, community agencies, and community organizations in recruiting should be developed or enhanced.

University and program admission standards need to remain flexible; again, the Colleges of Law are good examples to emulate. The universities should encourage applications from those who do not meet standards and communicate to students that exceptions are possible, only if there are good mediation programs available. Finally, the availability of financial aid for undergraduates needs to be communicated, and, stipends for graduate students need to be competitive.

RETENTION

INTRODUCTION

As important as recruiting and enrollment management are in assuring minority student access to a university education, we shall have failed if the students we enroll do not have a good chance of completing their programs. Retention and graduation of a larger number of minority students are the ultimate goals of minority recruiting and enrollment management.

Effective retention programs, according to Tinto (1988), have several essential features:

1) the university is a social and intellectual community built upon interpersonal contact and mutual concern;
2) there is an institutional commitment to students;
3) the mission of the university stresses the goal of student education; and
4) the university is discriminating, but not discriminatory.

The university experience in terms of interaction and fit is one of three important variables that affect minority student retention as well (Gutierrez 1988). The other two variables are pre-collegiate experience and personal characteristics.

"Student departure" from a university takes many forms and has many causes, some institutional and some individual (Tinto 1988). From a student perspective, the major causes are academic difficulty, lack of academic and social adjustment, unclear goals, and lack of commitment to graduate. Extensive research on retention (Smith and others 1981) shows that different causes of student departure define different target populations for specific retention activities. But overall, social and intellectual integration heightens students' attachment to the university and strengthens students' commitment to graduate. Gutierrez (1988) calls this becoming connected, and suggests that minority students can become connected through frequent use of campus facilities, holding a job on campus, and through informal contacts with teachers and students outside of the classroom.

The degree to which institutions formally plan and organize their campus improvements is related to the success of retention efforts (Smith and others 1981). Some of the institutional environmental factors to consider in planning for minority student retention success are: institutional retention goals, leadership, and faculty support; a positive, non-discriminatory environment; and special retention efforts that integrate persons into the mainstream of academic life that begin with recruitment and early outreach and continue through the university experience (Gutierrez 1988). Gutierrez' (1988) literature review identifies the following factors that influence the effectiveness of specific retention programs; they should be:

1) comprehensive;
2) institutionalized;
3) situated well in the university organization;
4) staffed by competent and dedicated persons;

5) non-stigmatizing to the participants;

6) focused on the early college experience;

7) supported strongly by faculty involvement; and

8) monitored and evaluated systematically.

Academically, the curriculum needs to reflect minority students' cultures and world views.

Tinto recommends that the best investment of resources is in "frontloading of effort" (1988). He says, "This is the case not only because the greatest proportion of leaving occurs in the first year, but also because over half of all student leavings have their roots in the first-year college experience." Based upon experience, Tinto believes that the "expected range of gains in rates of student retention over a five year period is between 10 and 20 percent of the entering student body." The national average is about 47 percent for four year institutions (Tinto 1988). Institutions with selective admissions standards have 5 year graduation rates that are several percentage points higher (Church 1988).

OUTCOMES

Specific retention programs for minority students in Arizona universities are recent developments. The Arizona Universities' Study Group on Minority Recruitment and Retention, convened in 1983, documented only a few, unsystematic efforts. The "Study Group" recommended a systematic approach to retention for the universities, and the universities responded to some of the recommendations within a few years of the publication of the report, but many of the current retention efforts are new. The retention outcomes discussed below should be evaluated in this context. Outcomes of past and current retention efforts are discussed in two sections: Minority Student Persistence and Graduation Rates; and Degrees Awarded to Minority Students.

Minority Student Persistence and Graduation Rates

Three cohorts of new freshmen are analyzed for patterns of minority student persistence in and graduation from Arizona universities: a 1980 cohort from ASU (Table 6); a 1982 cohort from UA (Table 7); and a 1984 cohort from NAU (Table 8).

These particular cohorts are analyzed because they are available, relatively recent, presumably reliable, and, with the exception of the NAU cohort, they encompass a five year period. Since the data do not cover a comparable time period, conclusions about differences among the universities would be highly speculative. The fact that the data suggest overall patterns of minority student persistence and graduation rates is the most important and reliable conclusion to be drawn from the comparison.

The first pattern is that many new freshmen are taking a longer time to graduate than in past decades. Five year graduation rates are substantially higher than four year rates. The percentages of students still enrolled after five years suggest that graduation may be delayed even longer for some students, particularly Hispanic and American Indian students. There are also consistent patterns in five year graduation rates by ethnicity.

Graduation rates are very low for American Indians. Blacks and Hispanics also have low graduation rates. Asians have the highest rates of any ethnic group, including Whites.

When the retention and graduation data are re-expressed as "student departure rates" (percent not retained), they reveal some striking patterns (Table 9). After five years, 52 to 59 percent of the Hispanics, 64 to 75 percent of the American Indians, and 64 to 72 percent of the Blacks had left the institution they entered as new freshmen without graduating from it, compared to 30 to 47 percent of the Asians and 44 to 48 percent of the Whites. The largest share of the five year departures typically left after one year. After two years almost all of the American Indians who were not enrolled or graduated after five years had already left. Average second year losses for most other ethnic groups are also relatively high. The increases in Asian and Black students departures between the third and fourth years are also notable.

Data on student departures from Arizona universities support Tinto's (1988) observation that the reasons students give for leaving are numerous and varied. An exit interview survey conducted by Student Life at ASU during the fall semester, 1982, and a survey of students who did not return to NAU during the fall semester, 1987, conducted by Student Services, both document a similar variety of reasons for leaving, ranging from personal and financial reasons to academic reasons.

The NAU report is not tabulated by ethnicity. In the ASU study, the minority students who left reported the following reasons for their departure, in order of the frequency of response:

1) family problems;

2) money problems;

3) medical problems;

4) work conflicts;

5) accept full-time employment;

6) academic performance;

7) transferring to another school;

8) leaving the area.

These reasons are said to be fundamentally the same for other, non-minority students. Since the exit interview program was initiated at ASU in 1980, ASU Student Life reports that "money problems and work conflicts" are most frequently mentioned as reasons for minority student departure (Framework questionnaire response). The 1982 ASU Exit Interview Survey indicates that money and work were important reasons for leaving for all students, but that Black and American Indian students had more even distributions of responses over the major categories of "Money/Work", "Individual", "Family", and "School" than other ethnic groups, suggesting that these two groups face a broader range of difficulties.

Additionally, data on academic standing for the 1980 ASU cohort of new freshmen are indicative of a major reason for minority student departure. A little less than a third of the 1980 cohort who were not enrolled after one year also were not in good academic standing. The 1987 NAU survey mentioned above reports that about the same percentage of students who did not return were suspended or on academic probation. The NAU survey does not further address these students. But among the new freshmen in ASU's 1980 cohort who were not enrolled after one year, 70 percent of the Native Americans, 48 percent of the Blacks, 42 percent of the Hispanics and Asians, and 30 percent of the White/Unknown ethnicity students were not in good academic standing.

In the study of students who did not return to NAU in the fall, 1987, semester, almost 60 percent of the students who were contacted (includes only students who were not on probation or suspended) were enrolled in higher education institutions; about half were enrolled in community colleges and about half were enrolled in four year institutions. So, when students depart, not all of them are lost to higher education. Information on "system-wide" retention, including ethnicity of students, needs to be gathered to assess the magnitude of retention in higher education in the state, since the ultimate object of retention is that persons become further educated (Tinto 1988).

Degrees Awarded to Minority Students

In 1986-1987, 10.8 percent of the undergraduate degrees at Northern Arizona University were awarded to minority students. Both Arizona State University and the University of Arizona awarded 9.1 percent of their undergraduate degrees to minority students during the same time period (Table 10). The percentages of undergraduate degrees awarded to specific ethnic minority students is a reflection of their relative representation in the headcount enrollments in each institution. For example, the largest percentages of undergraduate degrees awarded to minority students were awarded to Hispanics at all three universities. At NAU, the next in rank were degrees awarded to American Indians, while at ASU and UA the next in rank were degrees awarded to Asians, followed closely by Blacks.

There are substantial differences in the percentages of graduate and professional degrees awarded to minority students during 1986-87 at NAU and UA, compared with undergraduate degrees awarded to minority students in these same institutions; there are fewer differences at ASU (Table 10). The relative frequencies of degrees awarded, again, reflect overall enrollments.

Table 11 is an analysis of trends in bachelor degrees awarded to minority students by Arizona universities between 1982-83 and 1986-87. The combined figures show slippage in bachelor degrees awarded to American Indians and Blacks over this five year period, and gains in bachelor degrees awarded to Hispanics. These data support the retention trajectories discussed above. The institution specific data show that NAU needs to be concerned about their progress over the last five years in all categories, and that UA and ASU need to be especially concerned about their progress in graduating Blacks and American Indians. Minority graduation trends reported in the Arizona Board of Regents Minority Recruitment and Retention Report 1987, combine undergraduate and graduate degrees awarded over the past four years, and the trends show the same general patterns (ABOR 1987).

THE RETENTION ENVIRONMENT

A university retention environment is composed of several interconnected parts (Figure 3), and it exists within the larger environment of the university's service community. Successful retention begins with early intervention and ends with graduation and placement. At both of these points there are important linkages with the community that the university serves. Assurance of financial security is particularly important at the point of access to a university.

Intellectual and social and cultural integration into university life contribute to students' feelings of belonging and their commitment to graduate.

Integration is mediated by interpersonal relationships with faculty and staff through advising and mentoring and career counseling. Finally, monitoring students' academic progress and evaluation of specific retention programs provide opportunities for further intervention and improvement of the retention environment.

A general interpretation of the retention environments of Arizona's universities is the subject of this section. The primary data are responses to questions in parts III-V of the Framework questionnaire. The interpretation is organized by components of the retention environment, rather than by university or by sections of the Framework questionnaire. Again, there are some missing responses to crucial segments of the questionnaire, so the data are not strictly comparable. Graduate and professional schools are discussed after the review of undergraduate programs.

Early Intervention

Early intervention programs are important bridges between minority student access, and persistence to graduation. They offer opportunities for improving academic preparation and competencies so that students meet entrance requirements, and for encouraging students to attend college, as well as opportunities for laying the foundation for success after entry.

The significance of intervention for recruitment and enrollment management was discussed earlier. Early outreach, partnerships with public schools, and bridge and transition programs also address two important variables that affect minority student retention -- pre-collegiate experience and personal characteristics. So, at the risk of some repetition, these programs are briefly reviewed again here. Responses to Framework questions A and B in section III (Appendix A) are the primary source for the review. There are no answers to these questions for ASU, but some pertinent information is available from interviews and responses to other questions.

Responses from NAU and UA indicate that special relationships with secondary school counselors are cultivated to enhance professional guidance. All three universities involve minority students in the process. All three universities also have early outreach, summer bridge, and transition programs, including some pre-college programs administered in academic units.

Examples of early outreach include: APEX and MESA at UA; Project Prime and "2+2+2" at ASU; and Talent Search and the Macy Foundation Project at NAU. Upward Bound, a federally funded program, provides pre-collegiate experiences at all three universities.

Summer bridge or enrichment programs include: New Start (UA), STAR (NAU), and STEP (ASU). On-campus visitation and registration days and new student orientation have some minority student emphases at NAU, ASU, and UA. The effects of these programs on minority student retention are currently being evaluated at each institution. The programs that prove successful should be retained and enhanced,. Special consideration should be given to the financial stability of the programs, since many of them currently depend upon federal or other grant funds.

Financial Aid

Financial assistance is a major factor in access to a university education for many minority students, in addition to its contribution to persistence to graduation. In the retention environment, therefore, financial assistance planning should be closely tied to early intervention programs. The Framework questions that concern financial aid may be grouped into four categories: packaging of aid; communication and assistance; work assignments; and an assessment of barriers.

All three universities assign a high priority to the use of institutional student financial aid funds to supplement student assistance from federal sources for needy students. There are several non-federal sources of institutional financial aid funds available, including private scholarships and grants, waivers, short term loans, and student employment. Much of this aid is targeted to minority students. A major concern in developing a financial aid package is in reducing students' potential loan obligations, and institutional scholarships and grants are the principal means of doing so. Financial assistance staff at NAU, ASU, and UA routinely provide individual counseling sessions and solicit advice on the adequacy of financial aid packages. The financial assistance offices also have appeal processes for reevaluating the adequacy of financial aid packages, and counselors are authorized to make adjustments, with appropriate documentation. Each university has a short term, emergency loan program to meet unanticipated student needs.

A concern was expressed in campus interviews that minority students tend to apply for financial aid after deadlines, for a number of reasons. The universities make extensive use of media, special publications, presentations, and personal letters to remind students that they must apply for financial aid, and that there is a deadline for application. At UA, for example, there are 25 on-campus information sessions during the year, and 20 to 30 information presentations off-campus. Reminder letters are said to be effective in increasing the number of timely applications. Northern Arizona University and ASU both keep some institutional student financial aid funds in reserve throughout the summer for unusual situations. The University of Arizona relies upon general student employment opportunities to meet the needs of late applicants.

Financial counseling helps to encourage timely applications, and to assist students in managing their financial affairs. Arizona State University has embarked upon a special effort to educate students about their financial obligations and responsibilities, including information about budgeting and after-graduation obligations. Northern Arizona University has a "Coordinator for Minority Student Aid" who is responsible for counseling minority students. The University of Arizona has an extensive training program in financial aid matters for persons who come into contact with minority students in recruiting and retention activities. NAU and UA report an increase in on-time applications as a measure of the effectiveness of their financial counseling efforts.

The "Self-Help" portion of a student's financial aid package can be on-campus work, and both ASU and UA encourage students to work to reduce loan indebtedness. The literature indicates that working on campus enhances minority student retention. ASU reports a special program to encourage administrators and faculty to employ needy and minority students, in recognition of the importance of on-campus work for retention. In all three universities, work assignments are usually at the request of individual students, and financial aid officer can encourage, but not require students to work in areas related to their academic major or career.

Financial aid barriers to minority student access and persistence reported by the three financial aid officers include: the complexity of the application process; late applications; and problems, or perceptions of problems, of indebtedness. The first two barriers are being addressed with several initiatives, discussed above; the last barrier is being addressed in part by attempts to include a greater proportion of scholarships and grants, and "Self-Help" through work, in students' financial aid packages. In the case of NAU,

> "The adequacy of the aid package in meeting each student's real need is determined by the sufficiency of funds in the right programs. There are never enough gift aid funds (grants and scholarships) to meet the documented financial need of our aid applicants, despite our policy of attempting to meet half of the student's need with gift aid."

Scholarship and grant resources need to be increased, and alternative means of financing a college education, such as loan forgiveness and overmatching, need to be explored.

Intellectual Integration

Integration in this context means becoming part of university life, becoming "connected" to use Gutierrez's (1988) term. Intellectual integration occurs when students know they can do the work, find the academic environment stimulating, and become excited about learning. The curriculum and faculty are obviously key components in the process of becoming connected, but students' preparation and motivation are equally consequential.

Support services for students, that deal with preparation and motivation, are usually located in student affairs divisions of a university, while curriculum and faculty are concerns of academic affairs divisions. There are critical areas of overlap in intellectual integration goals and objectives between these two fundamental domains, particularly between academic support services and academic curriculum and faculty.

This section is a review of some significant features of academic support services and curriculum, and bridges between the two, with special reference to minority students. It does not discuss basic skills (Language and Mathematics) courses. See Church (1988) for an evaluation of basic skills programs in the three universities.

Academic Support Services

Academic support services, predominately skills development and tutoring, are generally functions of student affairs offices and programs, and they are often combined with student personal development programs that deal with broad concerns of student integration into university life. Specific areas covered by Framework questions include: study skills development and tutoring; stigma attached to participants; staffing and performance evaluation; and program administration.

At UA study skills development and tutorial services are provided by the Academic Learning Skills Center, which provides services to all students, including minority students, and the Office of Minority Student Affairs. All minority students receive a mailer that invites them to attend specially designed orientation sessions that provide information about services.

Arizona State University provides tutorial services through their Educational Support Program, and they report a high demand for services. Study skills are developed in a "University Adjustment and Survival" course taught by the College of Liberal Arts and Sciences, and in four "adjustment" courses offered for ethnic minority students by the Minority Assistance Program. Students who may need academic support services are identified prior to entering ASU by recruiters and admissions officers. After the first semester, grade point averages are used to help identify potential users. An "Early Warning System", with participation by professors, is available for Minority Assistance Program participants.

The Learning Assistance Center at NAU is the primary center for all academic tutoring and skills development. The demand for these services is high. There is a university "survival" course taught in the College of Education. A federally funded program, the Student Support Services program, furnishes tutoring and skills development through the Learning Assistance Center.

Referrals from other programs, such as the Multicultural Center, and mailings help identify participating students. NAU is beginning to make initial contacts with potential participating students in the summer.

Student affairs personnel in all three universities are sensitive to the potential for stigmatizing students who participate in developmental programs, and there are conscious attempts to keep stigma to a minimum.

First, there are attempts to provide a non-stigmatizing environment, such as a favorable location on campus, and to develop a broad base of student participation.

Second, the course work is carefully designed for skills development and adjustment, rather than "remediation".

The majority of support programs in each university are staffed by student affairs staff, rather than by regular faculty. There are some faculty based programs, such as "skills" courses, and some regular, tenure-track faculty participation in other programs. Student affairs staff may have faculty associate appointments in various colleges.

Evaluation and merit awards take place through regular personnel performance evaluations. Persons who teach also are evaluated by their students. In all three universities, support service directors are said to participate in decision making and policy, and to be influential in setting policy. Participation is through regular meetings and delegation of responsibility and authority. Advisory boards with student representation, and program evaluation provide student insights.

Curriculum

Academic curricula that address minority interests and needs are integral parts of university retention environments that attempt to integrate minority students into university life. The Framework questions dealing with curriculum were asked of academic affairs officers who are directly responsible for undergraduate programming in their institutions. Questions cover the status of ethnic and cultural studies, how the curriculum is assessed for works by minority authors and works focusing on minority concerns and experience, library and bookstore holdings on minority affairs, and how the impact of changes in curriculum are assessed for their influence on the education of minority students.

At NAU, "There are no active ethnic studies programs." There are courses with ethnic and cultural content in several departments, but there are no special attempts to publicize them.

Most departments in the social sciences and humanities at ASU have courses that could be identified as ethnic studies offerings. The respondents identified a weakness in Native American studies, where, it is said, there are few faculty and there is little effort toward interdisciplinary work. The courses are publicized like any other course.

Ethnic and cultural studies are both accepted and stable at UA, where Mexican American Studies, Native American Studies, and Black Studies have been part of the institution and curriculum for many years. These programs are financially stable, with funding from the state. Black Studies is the least developed, because of difficulties in hiring Black faculty. There are additional ethnic studies courses in other academic units. Courses are publicized through the catalog, course schedule, and by "fliers".

Assessing the regular curriculum for adequacy in the study and analysis of works by minority authors and works focusing on minority concerns and experience is reported to be especially relevant in the humanities, fine arts, and social sciences at UA. In their new General Education program, in one of the required study areas, one course "must focus systematically on gender, class, race or ethnicity." Works of two of their well-known minority faculty members are used widely on campus.

Arizona State University is described as "relatively well off with regard to the curriculum and minority content." The curriculum is related to faculty interests and skills at ASU, hence it is an affirmative action concern there. The Interdisciplinary Humanities Program is regularly reviewed for a balance of minority concerns.

There are opportunities for assessing the curriculum for minority works and content at NAU, but there are no assessment criteria.

Of several special collections established at ASU's library in the 1970s, only the Chicano Studies Collection remains, although there are attempts to keep the

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other areas current. The Native American collection is said to be weak. Strengths reflect faculty interests. "The ASU Bookstore does not get good marks".

Northern Arizona University's academic affairs officer says that the library and bookstore regularly carry publications by minority authors and works focusing on minority concerns.

The bookstore at UA makes an attempt, through a periodic inventory, to see that works by minority authors and works focusing on minority concerns are well-represented. The UA library systematically collects works that address minority issues, at research and general levels. In fact, it is reported that such works are a "collection priority", especially in the "Native American" and "Hispanic-American" areas.

At ASU, "Changes in the curriculum and teaching methods are not assessed to determine their influence on the education of minority students." However, the Task Force for Assessing Undergraduate Education will make it an assessment criterion. The educational needs of minority students are considered in several courses taught by student service personnel at ASU as they are at UA and NAU. "Attempts have been made to study the learning styles of Native American students" at NAU. The University of Arizona response is relatively silent on curriculum assessment in relation to minority education.

Bridges

Academic support services and the academic curriculum should have the same objective: intellectual integration of students into university life. Therefore, there are important opportunities for bridges between student services and academic affairs, especially in curriculum and teaching. One opportunity is in offering support service courses for academic credit, and in involving faculty in teaching these courses and in tutoring; another is in sharing successful teaching techniques; still another is in closely correlating subject matter.

Most academic support service courses are offered for credit at NAU. Courses offered by the Minority Assistance Program and the "survival" courses offered by the College of Liberal Arts and Sciences at ASU are credit courses. ASU's respondent says, in support of this policy, "Offering these courses for university credit is the best way to attract students to take these critical classes."

The Director of the Academic Learning Skills Program at UA teaches a credit course. Student Affairs personnel at UA feel a growing need to conduct support courses for credit, and to further involve regular faculty. With a few exceptions, most academic support services courses are taught by student affairs personnel in all three institutions.

The response to the question, "How closely related are the subject matter and teaching methods of the regular curriculum to the subject matter and teaching methods of support service courses", produced the following responses: "There is not a great deal of systematic coordination between the regular curriculum and the curriculum offered by Student Services" (UA); "Overall, there seems to be very little interaction between Academic Affairs and Student Affairs when it comes to minority issues (ASU)." There was no response to this question from NAU.
The support service courses at UA

generally enhance the regular curriculum. At ASU, the respondents said that there are few links between regular faculty and the Minority Assistance Program.

The opportunity to share effective teaching techniques is not generally taken advantage of. At ASU, "the faculty does not seem to be either aware of the content or effectiveness of these courses [support service courses]." At UA, support service course do not become part of regular curriculum: however, individuals from Student Affairs and regular faculty are currently collaborating to develop a freshman "survival" course (University 101). NAU provided no response to the question concerning coordination.

Observations

Tutorial services are in high demand, according to the information provided in responses to the Framework questionnaire, and there is concern that some students may not be able to find tutors. Regular faculty do not generally participate in tutorials, and some academic affairs personnel are concerned about the academic content of tutorial sessions, in terms of relevance and rigor. Some student affairs personnel are concerned that faculty do not generally participate in tutorials.

How offices and programs that deliver academic support services coordinate their efforts needs to be examined; some programs are designed specifically for minority students and others for all students. In the words of an administrator at ASU: "Minority programs simply cannot and should not be expected to respond to a concern that should be assumed by the entire university." The importance of early identification of potential problems and early intervention is recognized in all three institutions, but it appears that some work remains to be accomplished in this area. The importance of a non-stigmatizing environment for academic support services is also recognized. However, the juxtaposition of minority affairs centers and counseling as well as other services that deal with student "problems" that occurs in each institution, may be sending a negative message.

The impact of the curriculum on minority education needs some basic attention. Courses that treat ethnic and cultural diversity need to be identified, or developed if necessary. Some consideration should be given to publicizing ethnic and cultural diversity courses and to incorporating them in programs of study, such as "general" education requirements. Some means of assessing the "diversity" content of new or revised courses, where appropriate, would help in developing a curriculum that better reflects the university's service environment and the composition of its student body.

One of the most critical questions that the universities need to ask themselves is: How can student affairs personnel and faculty join forces to address the issues of retention? The data clearly indicate that the necessary bridges do not exist. A large part of the problem is a general lack of faculty involvement in student development outside of the classroom. Another large part of the problem is structural and administrative. Stodt and Klepper's recent collection, entitled, "Increasing Retention: Academic and Student Affairs Administrators in Partnership" (1987), could be a starting point for dialogue that could lead to better bridges and, most importantly, to better retention.

Social and Cultural Integration

Programs, policies and procedures designed to foster social and cultural integration of minority students into university life have to start from the recognition that universities are distinctive cultural systems, some aspects of which are unique to specific institutions, as well as the recognition that students enter the system as participants in one or more "home" cultures. This cultural field is also relevant to intellectual integration. But cultural differences and similarities are particularly evident in social interactions of students with staff, faculty, administrators, and each other. Lack of sensitivity in these interactions and lack of participation in the social life of a university can be as discouraging as failure to achieve academically, and can equally contribute to early departure.

Current university programs, policies, and procedures designed to foster social and cultural integration of minority students are reviewed as two topics: sensitivity and social life. Framework questions that deal with these topics are found in section V.; the Deans of Students were asked to respond to them. There is no response from NAU.

Sensitivity

Institutional responses to the issue of sensitivity in cross-cultural interpersonal relationships are the subject of three questions in the Framework questionnaire. The first question asks for information about institutional programs for reducing prejudice, and institutional responses to incidents of prejudicial behavior. The second query deals with complaint and grievance procedures for students, whether minority students use these procedures fully, and how institutions attempt to resolve minor and major problems that might lead to withdrawal. The last question asks about general processes of review of campus customs and rules of conduct for their "receptiveness and congeniality to minorities."

Arizona State University's "Personnel Training Department" has a group training program to reduce prejudice and develop sensitivity, entitled "cultural awareness," that is facilitated by a panel representing the major ethnic groups on campus. It focuses on interpersonal relationships. Their standard institutional response to incidents of prejudice is to take corrective action immediately and to "counsel and/or discipline the offending party." The "Student Affairs Staff Development Committee" at UA, constituted this past academic year with the theme of "appreciation of diversity". They held five sessions with staff to increase understanding of minority student needs, perceptions, and feelings. The University of Arizona also has recently appointed three assistant Deans of Students with special responsibility for Native Americans, Blacks, and Hispanics, and they have begun a program on ethnocentrism led by one of the assistant deans. The Affirmative Action office at UA also holds seminars.

The Dean of Students office at UA is in the process of "reinforcing informal networks" to report incidents of prejudice and to gain the confidence of minority students that their complaints will be taken seriously.

Both ASU and UA have numerous complaint/grievance procedures that are available to students. The Dean of Students office at UA believes that "there should be more complaints filed than there are." This is partly a problem of information, and the Dean of Students at the University of Arizona has prepared a series of bookmarks for students that identify procedures and how to use them. They are looking to the Assistant Deans for help in identifying incidents that need to be resolved, and they are working in the residence halls to identify informal channels to try to help avert withdrawals. Additionally, UA is currently evaluating training programs offered through the residence halls for what needs to be included to reduce prejudice, and they are initiating special recruitment programs for minority residence hall personnel. Residence Life at ASU has a "Human Rights Task Force" charged with reviewing student complaints and concerns, and the residence hall staff are "trained to be specifically sensitive and responsive to minority concerns and are well represented ethnically." ASU handles and resolves problems as close to the source as possible. Appeals and grievance procedures and staff are available widely, but "While Student Affairs and minority staff are available throughout the division to students facing major decisions, often they are not consulted before students withdraw."

The University of Arizona reports a similar problem: "Yet, we know that students do withdraw as if they have not found a listening ear." Both UA and ASU report that major problems, such as unfair treatment, are dealt with promptly when brought to their attention.

Neither ASU nor UA report general institutional processes of review of campus customs and rules of conduct for their receptiveness and congeniality to minority students. At ASU there are several boards and committees that are sensitive to the needs of minority students, most notably a "Minority Affairs Council" that has members from the service community. The Human Rights Task Force in Residence Life has the task of working on minority student issues as a current project, and it is in a position to recommend how the social environment might be made more congenial to minority students. At UA, the Vice President for Student Affairs recently instituted two support groups for Blacks and American Indians that include community, university, and student members. One of the support groups' concerns is the treatment of minority students. The concept of a "special admissions day" for Blacks was a recommendation of the Black support group, for example, and the concept has been extended to include a special day for Hispanics and American Indians. The general student Code of Conduct is under review at this time by all three universities, for all students.

Social Life

Universities have some control over student social life by monitoring campus organizations and campus extracurricular activities, and through their sponsorship of student entertainment and activity programs. Minority participation and interests in these three areas are the subject of the Framework questions that directly relate to campus social life.

"All clubs and organizations must incorporate a non-discrimination clause into their constitution," at the University of Arizona. The constitutions and their implementation are monitored, and there is a university discrimination complaint procedure that is student initiated.
"Vigorous action has been taken when incidents of discrimination have been reported." Some positive signs of

congeniality to minority student concerns are evident in the Associated Students of the University of Arizona's last Homecoming exhibit, which was planned by the organization's Minority Action Council. The University of Arizona does not currently have detailed statistical data on minority student participation in campus organizations or in extra-curricular activities. Efforts to increase minority student participation are notable in the area of student leadership. The UA's summer bridge or enrichment program, New Start, has a leadership training and networking component called: "New Start Senate." This component is a cooperative effort of the student government and the Office of Minority Student Affairs. New Start senators plan a social activity and work with Associated Student leaders and they are introduced to the Minority Action Council. There have been some significant successes in getting New Start Senate participants involved in student government.

At ASU, "All student organizations officers sign a pledge of non-discrimination when they register their organization with the University. This pledge is reiterated when the organization requests funding support from Associated Students (Student Government)." There is a Minority Cultural Affairs Board in Student Government that sponsors and supports activities that make the campus more congenial to minority students. Associated Students actively recruits minority students for jobs annually. Minority students from ASU's Leadership Scholarship Program have been very successful in participating in student government. ASU's response documents minority student participation in various extracurricular activities and refers to a large number of active minority campus organizations -- for example, the Hispanic Business Students Association. In addition to the Leadership Scholarship Program, there are other leadership training programs that have minority student participation.

In an effort to ensure that student entertainment and activity programs include activities that feature minorities, and that reflect minority student interests, ASU has developed a "Cultural Diversity Committee" in Student Life "designed to aggressively implement literature, art, music and dance programs that are cross-cultural and reflective of the interests of minority students, faculty, and staff." The Cultural Diversity Committee's activities are funded by state appropriations.

At the University of Arizona, several programs and colleges regularly bring minority artists and scholars on campus; a recent example is a writers series by the Poetry Center. Until recently, most student activity has been left to student leadership. Recent developments include a Martin Luther King Day Planning Group and the Minority Action Council's sponsorship of a "Cultural Awareness Week." During the 1987-88 academic year UA instituted a university "Program Council." One of the goals of the Program Council is to sponsor programs that represent cultural diversity.

Observations

A lot of attention is being given to social and cultural integration of minority students and its impact on retention at Arizona State University and the University of Arizona. Much of the activity on both campuses is very recent, hence it will take some time to see the effects. Some programs, for example student leadership training and community support groups, are working well already. Developing a campus culture that signals welcome and responsiveness is a campus-wide project; faculty as well as staff and administrators need to become involved in the effort. The Dean of Student Life at ASU says it well:

> "Persistence of minority students goes beyond the co-curricular activities and services of Student Affairs. It relates to all parts of our campus environment and requires a total institutional commitment."

Staff efforts appear to be underway, but I do not have any information about faculty involvement.

There is still considerable concern at all three universities about lack of sensitivity and there is still a perception that campus activities "are for whites", base upon interviews I conducted during the spring semester, 1988 (Wood 1988). As the Dean of Students from the University of Arizona says:

> "We do need to gain better understanding by surveying staff and leaders about actual participation rates across clubs and organizations. We need to ascertain if underrepresented students participate only in minority student organizations, how well minority students are represented in governance councils, living units, student government, and council groups."

Also, further enhancement and development of sensitivity training for faculty, staff, and administrators appears to be called for, especially training in how to build and fulfill trust. And, part of the answer to negative perceptions lies in developing a more diverse faculty, staff, and administration.

Special consideration needs to be given to "Becoming aware of those hidden cases of students [who] simply walk away rather than letting us know how unfriendly an experience they have had here."

Advising

Advising can be a key link that facilitates both intellectual integration and social and cultural integration of minority students into university life. Advising is the major opportunity for faculty and student interaction outside of the classroom. Faculty should be well-qualified to offer advice about academic programs and concerns, and in their interactions with students they could help create a sensitive and welcoming environment for learning.

Two questions in the Framework questionnaire deal with advising. One asks if "there are institution-wide attempts to ensure that the academic advisors assigned to minorities are sensitive to the emotional and academic needs and the cultural backgrounds of the minority student, especially during the first year," and how the assignments are monitored. The other asks if academic advising, career counseling, and placement functions could and should be better coordinated, and if this matter has been addressed. The directors of university advising centers at NAU and ASU, and the Director of the Student Resource Center at UA responded to these questions. The "Report of the Task Force on Academic Advising, University of Arizona, March 2, 1987" was also consulted.

Academic advising for declared majors who are accepted into programs is based in the colleges and schools at all three universities. NAU and ASU also have university advising centers for undeclared and unclassified students. UA advises the latter in the College of Arts and Sciences. There are also minority student advisors in the Multicultural Center at NAU, and in the Office of Minority Student Affairs at UA.

I have very little data about college based advising for minority students, except for the information that some colleges provide special advising efforts.

In NAU's University Advising Center minority students are "mainstreamed"; if they need special attention they are referred to the Multicultural Center, which is next door. Advising Center advisors are trained in academic advising, but "We make no effort to train them regarding special needs." ASU's University Academic Advising Center functions to supplement and complement advising in the colleges.

The Advising Center's staff advises students who are undecided, undeclared, unclassified, and visiting ASU. Students who used the center the first year of its opening, 1986-1987, gave the center extremely high ratings. ASU's advising center attempts to meet the needs of minority students who use its services by having a culturally diverse staff. Undecided students at UA are advised in the College of Arts and Sciences. Students with special needs, including minority students, are directed to other parts of the university. The Task Force on Advising at UA recommended a university advising center.

Arizona State University's respondent believes that career counseling, academic advising, and placement functions are well coordinated at ASU. At the University of Arizona, the Student Resource Center in Student Affairs has developed an "Orientation, Advising and Retention" office to coordinate university wide concerns in these areas. The Student Resource Center has also requested the Provost's office to establish a Task Force to study campus wide "career resource and placement needs." At Northern Arizona University career counseling and placement reports to the Vice President for Student Affairs, the advising center reports to the Vice President for Academic Affairs, and the advising centers in each of the colleges are funded by the Deans. NAU is "exploring the possibility of centralized advising for all students until they declare a major and are accepted" into a program where they would be assigned an advisor.

Observations

Advising is a major opportunity for faculty to become involved in student development and retention efforts. The implications of academic advising for minority student retention need to be carefully considered at all three institutions. Faculty should participate in cultural diversity and sensitivity training so that this opportunity is maximized. Existing programs for staff development could be extended to the faculties.

Advising, career counseling, and placement are closely related concerns, from a student perspective. Some thought needs to be given to how these functions might be coordinated to better serve minority student needs.

Career Counseling and Placement

Career counseling and placement are important services for student retention. The Director of Career Services at ASU tells us why: "Career Counseling often assists students in gaining a sense of purpose and direction in their educational pursuits."

Unclear goals and a lack of commitment to graduate are one of several causes of student departure, and services, such as career counseling and placement, that assist students in developing educational goals can contribute significantly to increasing student retention and graduation rates. The first Framework question that considers career counseling asks about the role of career counseling in student support, and if minority students use the support mechanisms. The second asks about summer employment opportunities; the stress on career coordination in summer employment; and whether minority students use the summer employment services fully. A third question deals specifically with placement services and their utilization by minority students.

Finally, the question about the coordination of advising, career counseling and placement discussed under advising is revisited. The Director of Career Services responded to the questions for ASU. At NAU and UA the questions were answered by Student Services administrators.

There are several opportunities for students to learn about career planning at ASU: courses are taught in career planning every semester; English 101 and the university "survival" courses have a career planning component; testing services are available; and students may make individual appointments for career counseling. ASU has a Career Development Center with interactive computer guidance programs, and special publications targeted to minority students. Minority student participation in the use of the computer facility is good (17 percent). There are several career programs in the academic areas as well: for example, the Hispanic Business Program. There are several efforts to specifically target minority students for career counseling. Letters are sent to freshmen and sophomore minority students inviting them to participate in an IBM sponsored leadership and career planning program.

Minority students are also sent letters inviting them to register for ASU's Career Coordinated Employment Program. Career Services also makes presentations to clubs and associations.

"N.A.U. recognizes career planning and placement as a major retention tool for students." NAU's university "survival" course, which is required for undecided students and for students admitted with exceptions, covers career exploration in addition to an orientation to the university. The Career Planning and Placement Office helps in the course.

There is a "satellite" office of Career Planning and Placement next to the Multicultural Center at NAU to assist undecided students advised in the Advising Center and to assist minority students. The use of the satellite center by minority students reflects the percentage of minority students enrolled in the university. Career Planning and Placement Office staff make career planning presentations to classes and in residence halls. NAU also has a career peer counselor program to assist students.

At UA, staff of the Student Counseling Service and the Career and Placement Service counsel students about careers. "We feel that minority students use these services but we need a more proactive posture." The University of Arizona is planning a University 101 ("survival") course with a career guidance component, and staff of student affairs have requested a university wide study of career planning and placement activities. A task force last year developed a generalizable model within the Psychology department for informing minority undergraduates about graduate training.

The student employment office of financial aid is the "central location for student employment" at NAU. Jobs, including summer jobs, are posted there.

Residence life is one of the largest on campus summer employers, and staff actively recruit minority students. The Multicultural Center and Student Life are referral agencies for minority student employment. Students are encouraged to seek employment which is a "good fit". Student employment at NAU "is an area which could benefit from a better coordinated effort for placement of students."

The Job Center in Career and Placement Services at UA serves a very high percentage of minority students (32 to 38% of the users are minority students).

There are summer opportunities listed, and the academic colleges also offer employment opportunities. Use of the job center is encouraged by student affairs ethnic staff mentors and through publicity. Asians make the best use of the services and American Indians make the least use of the services. "We, obviously, need to work more on this issue." The Office of Minority Student Affairs works directly with corporations to identify minority students for summer internships.

At ASU students are helped in finding summer employment and internships through Financial Assistance, Career Services, Cooperative Education, and academic departments. Cooperative Education, the Internship Program, and Career Coordinated Employment help students find employment related to career interests. There are special efforts to reach minority students. Letters inviting participation in the Career Coordinated Employment Program were mentioned previously. Student assistants also make presentations to clubs and associations about the program. In April of this year, 14.5 percent of the students enrolled in the program were minority students. Financial Assistance has a summer job fair in March of each year, and employers are encouraged to come to campus to recruit students for summer employment.

Placement services at all three universities are in the same office as career counseling. Prospective employers and recruiters must agree to Equal Employment Opportunity recruiting, and efforts are made to monitor "inappropriate recruiting practices". Fifteen percent of the students who use Career and Placement Services at UA are minority students. Major corporations also make contact with the Office of Minority Student Affairs to recruit UA minority student graduates.

At ASU, Career Services assists with full-time employment upon graduation, and Financial Assistance and Career Coordinated Employment assist with part-time employment. Career Services at ASU distributes a list of minority clubs and associations to employers, and offers the clubs and associations workshops and encourages them to keep resume books. Through the Career Coordinated Employment Program, students are encouraged to register with placement early. Placement records are maintained, and the office makes regular contact with registered students. Minority students make up 12.5 percent of the students registered for placement at ASU.

The Career Planning and Placement Office at NAU and potential employers make direct contact with the Multicultural Center for recruiting. It is said that a high percentage of minority students receive offers. There is "no indication of ethnicity" on Career Planning and Placement Office records. NAU provides potential employers with a list of minority student clubs and associations and specific visits are made to the student groups. An externally funded graduate assistantship is designed to assist minority students with placement and career counseling.

The UA has coordinated some efforts in these areas, as mentioned previously, and there are plans to study career planning and placement university wide.

The spatial association of the Academic Advising Center, the Career Planning and Placement satellite office, and the Multicultural Center at NAU encourages informal cooperation. "However, this is an area which could be improved over the coming years." Career Planning and Placement and academic departments cooperate during Career Day each fall at NAU. At ASU, there are liaisons with colleges and Career Counseling and Placement, and the Career Development Center is located between the Counseling and Consultation and Career Counseling and Placement Offices, encouraging cooperation between the two staffs.

Observations

Where data are available, minority student participation in career planning and placement programs is very good. Data from the University of Arizona suggest that there may be differential participation by ethnicity, so that additional work may be needed to encourage greater participation by some groups.

There are some good career planning and placement programs in one or more of the three institutions that could be profitably adopted or modified. For example, ASU's Career Coordinated Employment Program has many of the elements that contribute to better retention, such as early intervention, proactive recruiting for the program, and continuity with post-graduation placement.

"Obviously, the better coordination there is of services, the better a student is served." (Career Services Director, ASU).

The respondents suggested several areas, indicated above, where better coordination could be helpful. One of the benefits of coordination, from a retention perspective, is what the University of Arizona respondent calls "continuity of contact".

Monitoring and Evaluation

Monitoring student progress and carefully evaluating retention policies, procedures, and programs can contribute to better retention and improve student performance if the data are used to modify, eliminate, or create policies, procedures, and programs. Responses to questions discussed in this section cover monitoring and evaluating student progress, and retention efforts and research. There is also a general question about the emphasis placed on institution wide procedures to improve student persistence, and the roles of department heads and administrative staff in the process. The questions were directed to administrators in student affairs. Two of the three Framework questions, Section V, A and B, have no response from NAU.

Students' academic progress in universities is generally measured by the grading system and grade point averages. At UA, a Student Outcomes Task Force recently developed recommendations for measuring student progress that would also include personal development and growth. The UA respondent reports that the recommendations are in the process of implementation. The effectiveness of student support services courses at UA is measured by pre- and post-tests and by student evaluation. A writing competency test is administered at the junior level at UA. The response to a question about what is known about the academic progress of minority students at the University of Arizona is: "We are currently in a position to know which minorities make good academic progress and which do not." Special support services for students for whom English is a second language are provided in English as a Second Language (ESL) programs at all three universities.

Northern Arizona University monitors students who are "at risk" of withdrawing, early in their university experience. Students who are admitted provisionally are contacted through the Multicultural Center. There they are given individual staff attention, and the Multicultural Center staff monitors the students' academic progress by requesting faculty to send progress reports to the Center.

The Center staff may also contact professors directly. A program initiated in the summer of 1987 attempts to contact students who are on academic probation. Students at NAU demonstrate their competency by successfully completing the university Liberal Studies requirements, including Math and English. In addition, academic programs may have program prerequisites and placement or entrance exams. There is no response from NAU to the question about how much is known about the academic progress of minority students.

The response to this particular set of questions from ASU is very general, and the respondent recommended that the questions be redirected. The person to whom the questions were redirected did not respond. The following discussion, as indicated above, does not include responses from NAU.

Universities are in an excellent position to research the causes of minority student attrition in their institutions and to incorporate the results into their retention programming. The Office of Institutional Analysis at Arizona State University conducts periodic studies on persistence, graduation, and academic success of all students; they do not research the causes of attrition. Student Life at ASU has had an Exit Interview program since 1980. In a 1982 study, they found that the reasons for attrition were "fundamentally" the same for minority and majority students. The reasons for withdrawing most frequently mentioned by minority students since 1980 are "money problems and work conflicts".

In 1985, Student Affairs offices at the University of Arizona initiated an ongoing study to investigate student satisfaction with their university experience during the second semester of their freshman and junior years. This cooperative effort is funded by Student Affairs and the office of Academic Affairs concerned with undergraduate education. The Student Affairs Research Office is currently analyzing retention data. There are also several studies on the "efficiency" of tutoring, peer counseling, early outreach and summer bridge programs. The main factors responsible for attrition at UA are the same for minority and majority students.

> "However, late planning for higher education, students not getting adequate information, failure to meet priority service deadlines, lack of exposure to those who have attended college, are factors which particularly influence minority student attrition."

The last question included in this section asks: "How much emphasis has been placed on developing institution wide procedures to improve minority student persistence?"; and "What are the roles of administrative staff and department heads in this process?" "There has been consistent effort at the University of Arizona to disperse responsibility for improving minority student persistence across the university." Student Affairs Research at the UA is analyzing retention data and sharing it with academic departments and colleges, for example. "This process places accountability for addressing retention issues at the college and departmental levels." Student Affairs offices and programs work cooperatively on retention issues at UA. There is academic involvement in a "Writing Skills Improvement Program"; departmental representatives help in summer bridge programs; and academic research centers conduct retention research.

Arizona State University is committed "to improving minority student persistence. Many efforts have been made by individual departments in both Student Affairs and Academic Affairs to promote a campus climate where minority students feel welcomed, appreciated, and encouraged to excel."

Administrative staff and department heads are expected to give a high priority to affirmative action goals, and Student Affairs administrators are encouraged to involve minority students in programs and to be sensitive and responsive to minority student concerns.

ASU's Minority Student Orientation program for students and parents involves faculty and administrators. Students are involved in the Associated Students' Minority Cultural Affairs Board. Student Affairs staff are involved in specific retention programs and in the Cultural Diversity Committee.

Observations

Peter Ewell, in his report to the EEC Task Force, cites research that indicates that:

"Student assessment programs have also been widely associated with gains in student persistence and graduation. This is due primarily to two different mechanisms. At the level of individual courses, coupling assessment of prerequisite skills with course registration policies can result in significant increases in success rates. ... Second, institution-level assessment results -- particularly the results of student attitudinal and perception surveys -- can result in documentable increases in overall rates of student retention and degree completion" (1988:18-19).

The University of Arizona's "satisfaction" survey falls into the latter category. Northern Arizona University has recently conducted a university wide student needs assessment survey, specifically designed for ascertaining minority student needs. All three universities have assessment and placement in basic skills courses. The three universities should consider additional diagnostic assessment and university wide attitudinal and perception surveys as tools for retention.

Monitoring minority student progress with appropriate intervention, especially early intervention like the program at NAU, also should help improve retention. On-going student retention research and careful evaluation of programs need to be continued or initiated, as the case may be. Further cooperation across departments and divisions, and university wide coordination of retention efforts are essential for maximizing minority student retention and timely graduation.

Community Service Programs

A university's retention environment is embedded within its service community. Staff, faculty, administrator, and student involvement in community service programs demonstrates concern for the welfare of minority communities and establishes linkages that can help with the preparation and support necessary for university success. The relevant Framework question asks: "Is it institutional policy to demonstrate concern for the welfare of minority communities in the region through operation of various community service programs?"; and "How are minority students and faculty involved in these programs?" The question was asked of Deans of Students. There is no response from NAU, although responses and to other questions touch upon the same subject.

All three universities have forms of community outreach that involve university personnel; staff, students, and, sometimes, faculty and administrators. Public school intervention programs, cooperative education and internships programs, student volunteer work, recruiting programs, active participation in United Way, participation in fund raisers for community organizations, speakers bureaus, and community advisory boards are good examples of community outreach by Arizona's universities that impact upon minority communities. Two innovative programs were mentioned in the responses from ASU and UA. ASU participates in a "Hispanic Mother-Daughter Program", which is a community and university cooperative effort to motivate Hispanic women to become interested in higher education. Hispanic faculty and students are involved in the program as volunteers. The Assistant Deans for Cultural Affairs at UA, mentioned previously, function as community liaisons, in addition to their other duties on campus.

The universities demonstrate concern for the welfare of minority communities by encouraging university participation in community activities. There is always room for improvement in this important area of concern, though. Closer working relationships with minority community advocates is highly recommended. Community advocates and the universities have the same basic goals for young people, so they should be working together to meet those goals.

Graduate and Professional Colleges

The questions and responses in this section address some aspects of the retention environment from the perspective of graduate and professional students. Graduate and professional colleges are situated within a university's general retention environment, so most of the discussion of the impacts of retention policies, procedures, and programs also applies to graduate and professional students. Yet, graduate and professional students "have different daily life cycles and different patterns of needs", in the words of ASU's Graduate Dean.

The Framework questions for this section cover three domains: equality of treatment and nondiscrimination; academic support before and after admission; and the availability and adequacy of student services.

Questions about student academic support before admission were answered by student services personnel; questions about academic support after admission were answered by persons in the Graduate and Professional colleges.

The first set of responses reviewed are about post-graduate students in general and graduate students in particular. A brief consideration of professional colleges follows.

The institutional policies concerning assurance of equal treatment and nondiscrimination are said to be clear by the respondents from each university's graduate college. At ASU,

> "According the Graduate College Survey several units believed that while the letter of the law was adhered to, the spirit was not. Problems still exist for minority students in the classroom where they experience ethnically offensive remarks and where they are received as the burden and the problem. Yet in other areas where more minority students are enrolled, the faculty had learned to better handle the cultural differences."

Adherence to the letter and not the spirit of "the law" in regard to minority affairs is a more general issue than at ASU or graduate and professional colleges, based on interviews that I conducted on the university campuses.

There are two questions about academic support, or developmental (the questionnaire uses "remedial"), programs. The first asks about programs designed to help undergraduates who do not qualify for admission to graduate or professional schools because of inadmissible performance on tests or insufficient grade point averages, and whether or not the programs have any influence on later attendance. This question was directed to student affairs administrators. At ASU the respondent recommended that the question be redirected, but one of the persons to whom the question was redirected did not respond. The other "redirectee" responded to a similar, second question. The question stimulated a general but pertinent response from the UA administrator, the essence of which is: "This is an area that needs better attention and relates to thoughts about offering more help to those that fail." The Learning Assistance Center at NAU offers workshops for undergraduates "who fail to qualify due to test scores on standardized entrance exams, or who are seeking preparatory tutorial help prior to completing the test."

Some of the tests covered by workshops at NAU are the PPST (Pre-Professional Skills Test), GRE, LSAT, and GMAT. The UA also conducts "mini-workshops" on the PPST.

The second question asks graduate school personnel about the role of "remediation techniques" in graduate and professional training at their institution, and what effects such programs would have on retention of minority students.

The Graduate Dean at ASU reminds us that: "Terminology such as 'remediation techniques' is not particularly apropos of the situation that exists at the level of graduate study." There are many reasons why graduate colleges need to expand and improve the skills of graduate students, he goes on to say. Some of the reasons are refreshing old knowledge, entering a graduate field different from a student's undergraduate major, and lack of exposure to intensive written communication requirements. ASU has planned workshops to meet the special needs of minority students, and academic units may nominate first year students for the Graduate College's mentor program.

The mentor program matches the student with a graduate student mentor under the supervision of an academic advisor. Some minority student retention problems that were mentioned in ASU's "Graduate Survey" are: there are small numbers of minority students in some programs, making it difficult to form "informal support groups"; minority students may take a longer time to graduate because of language difficulties; and minority students may lack the political sophistication needed to make use of the "informal flow of information." At the University of Arizona, there are many programs for undergraduates; it is said that in graduate school there is more individual attention in tutoring and mentoring.

"Remediation programs specifically for graduate students are not available at the University of Arizona at this time." "Remediation is not a major problem at the graduate level," at NAU. NAU's graduate programs are small and the graduate office works with departments to help remove deficiencies or to deal with academic problems. The graduate office notifies departments and advisors if a graduate student gets less than a B in a course, for example.

The response to the question about how well the regular student services are "attuned to the needs of graduate and professional students" and how fully minority students use these services from NAU is:

> "Student services are rarely aware of special problems of graduate students. The focus of most all student services is on the problems of the traditional 18-22 year old student. This problem is probably most serious with regard to financial aid."

The graduate college at UA "intends to survey student services for graduate students in the future." At ASU, many services are more "attuned to the undergraduate rather than the graduate student." The reasons cited for this difference are the large volume of undergraduates that need to be served, and the lack of awareness, in some areas, of the different patterns and needs of graduate students. "For minority students, the fact that the campus services appear designed to serve the needs of a different clientele compounds many of the problems facing all graduate students on campus."

The last question asks if special student services should be available to graduate and professional students, and how minority students could be most effectively given needed support. The planned survey at the UA will help answer the question for that institution.

The UA respondent suggests that special training for student services personnel and recruiting staff from minority populations could help provide needed support. Current services are needed, according to the ASU respondent. ASU's Graduate Survey respondents offered two suggestions: the first is to develop ways to address known minority graduate and professional student needs; the second proposes a needs assessment survey.

There is also the recommendation that minority services be integrated and that service areas hire minority staff to serve both minority and majority students.

"This has the important effect of sensitizing the entire support staff and does not segregate minority employees or the services they provide." NAU suggests that one person in each service area could be designated as the contact person and advocate for graduate students.

The College of Law at ASU has had a first year tutorial program since 1984, where students who are identified by low scores on the LSAT or low grade point averages work with upper class tutors during the fall and spring semesters. There are also minority student organizations; last year they sponsored a LSAT prep course designed for minority students. ASU's College of Law also participates in the Graduate College's Mentor Program. The respondent offered the same general observations about the role of student services in meeting law student needs as the graduate officer. Three additional suggestions are: student services needs to recognize that law students may not receive adequate information because they do not typically frequent the same areas of campus as undergraduates; some consideration should be given to establishing a Graduate Minority Student Affairs office; and some minority students might benefit from flexibility in the amount of time required to finish their degree.

At the University of Arizona, "The College of Law has been developing a strong support and retention program to assist minority students once they have been enrolled." The Minority Law Student Association at UA offers: group support; academic advice and book scholarships; tutorials for first year and selected second and third year classes in cooperation with the Law College; intensive writing workshops; and workshops on writing, note-taking, and outlining. The Colleges of Medicine and Pharmacy at UA both act affirmatively for students and offer support for students who are having difficulty with their curricula.

Observations

Graduate and professional students have different patterns of needs than undergraduates. Admissions selectivity and greater individual attention by faculty do not obviate the need for support services for graduate and professional students, once they are enrolled. Most of the programs reviewed above address academic needs, for example, through tutoring, mentoring, and workshops.

Financial counseling and aid, student employment, guidance, placement, housing services, and grievance procedures are services offered by student affairs, as we have seen, and there is some concern that these services may not be as well attuned to graduate and professional students' special needs as they could be. This is almost the reverse of the problem identified for undergraduate students: there are numerous support services offered through student affairs for undergraduates, but there is less involvement of academic affairs in student development outside of the classroom. Respondents offered several helpful suggestions for improving student services for graduate and professional students, ranging from conducting needs assessments and training to establishing a special office. Both minority and majority student retention might be improved by implementing some of their suggestions.

With the possible exception of NAU and the Colleges of Law, there does not appear to be much effort designed to help undergraduate students prepare for entrance examinations for graduate and professional schools, or to counsel them and improve their skills if they fail. A respondent from the University of Arizona offers an opinion, from the perspective of student affairs, why this might be the case at his institution:

> "I suspect most colleges have not developed specific advice or structure for students whom they disqualify or put on probation. Part of this comes from the fact that many faculty and academic administrators do not see the need for developmental work on this campus and are not encouraged to see or work with that need. Student Affairs will never be able to meet this need alone, in my estimation."

The developers of policies and programs designed to increase sensitivity to cultural differences should not forget to include graduate and professional schools in their planning.

Conclusions

The outcomes data on minority student retention to graduation in Arizona's universities are cause for concern. Except for Asians, minority student retention rates are much lower than for whites. Minority student graduation trends over the past five years also show some lack of progress in achieving the goal of retention. Strong patterns in the retention data suggest possible leverage points for retention programs; the strongest is an early pattern of departure. There are new programs underway that promise to take advantage of these leverage points, and to increase retention rates in the future.

Retention of minority students to graduation is a complex problem that requires a high degree of commitment, creativity, energy, and coordination for successful solutions. A first step in designing successful solutions is the recognition that there is a university retention environment that may be good, bad, or indifferent from the perspective of retention. An ideal retention environment is composed of several key components linked together to achieve the same goal. The key components are: early intervention; financial aid; intellectual integration; social and cultural integration; advising; career counseling and placement; monitoring and evaluation; and community service programs. The linkages are among students, faculty, staff, administrators, and the service community.

The critical look at the retention environments in Arizona's universities in this section reveals some strong components, some weak components, and some indifferent components. Most of the strong components -- the programs, policies, and procedures that have, or potentially have, a positive effect on retention -- are recent developments.

The biggest weaknesses in current retention environments are sparse linkages, spotty involvement of the faculty, limited university-wide coordination of retention efforts, and insufficient monitoring and evaluation of retention policies, programs, and procedures.

ROLE MODELS

Introduction

There is a strong conviction -- widely shared by university students, faculty, staff, and administrators, and especially by members of minority communities -- that minority faculty, professional staff, and administrators are a vital presence on campus that demonstrates institutional commitment to the goals of minority education. Minority personnel in positions of authority and responsibility serve as significant role models for students, and their empathetic advice and mentoring help students persist. They are also well-situated to bring their special knowledge and experience to bear upon the development and evaluation of policies, procedures, and programs that affect minority student access and persistence.

Minority faculty, professional staff, and administrators who serve as role models and university resources are often overworked, because there are usually so few of them on campus. The time spent with students and on committees and task forces has to be balanced with professional needs and obligations. If the demands upon their time in their roles of mentor and expert are too great, and they have to neglect the professional obligations that are the core of their performance evaluations, minority personnel may not be promoted, awarded merit, or granted tenure.

At a minimum, each university should have numbers of minority faculty, professional staff, and administrators that match the percentages of students in each ethnic group on campus, and considerable attention should be given to their retention and to the development of their professional careers.

Outcomes

Each university is an Equal Opportunity Employer and each has an Affirmative Action plan and an Affirmative Action office. But adherence to the "letter of the law" does not, necessarily, imply adherence to the "spirit of the law" by everyone concerned, as we have seen in another context. Furthermore, universities nationwide have not graduated enough minority professionals, so the competition for minority personnel is keen. For whatever reasons, minority faculty, professional staff, and administrators are underrepresented in Arizona's universities, by the minimal criterion mentioned above. Earnest efforts to recruit and retain minority personnel by Arizona's universities have resulted in gains in the past few years, and the trajectory looks promising for the future (See Cotera 1987).

Minority Administrators, Faculty and Professional Staff

Table 12 presents the minority percentages of total administrators, faculty, and professional staff compared with percent minority headcount enrollment for each university for the fall semester, 1987. At ASU the overall percentage of minority personnel in each of the three categories exceeds the overall percentage of minority student enrollment. Minority faculty, professional staff, and administrators at NAU and UA are underrepresented by these standards. However, the data tabulated by ethnicity for each university reveal some important patterns of representation that are masked by the aggregate data.

Most of ASU's minority administrators are Hispanics and Blacks, and over half of the minority faculty are Asians. The distribution by ethnicity for minority professional staff is more even, except for the small percentage of Blacks. At NAU most minority administrators and faculty are Hispanics; Hispanics and Blacks are nearly tied among minority professional staff. Most minority administrators at UA are also Hispanics. Most minority faculty at UA are Asians, closely followed by Hispanics; the reverse is true for professional staff.

Hispanics are underrepresented, in comparison with Hispanic student enrollment, in all categories at all institutions, except for administrators at ASU. The strongest representation of Hispanics is among administrators; the weakest is among faculties.

American Indians are very strongly represented among professional staff at ASU, and they are moderately well represented among professional staff at UA and among administrators at ASU.

American Indians are underrepresented in all categories at NAU, but the percentage of American Indian students enrolled is greater by far than in either ASU or UA, and with the exception of professional staff, NAU has the best percentage representation. Underrepresentation of American Indians at UA and ASU is not great, but the percentages of students are also small.

Blacks are strongly represented among administrators at ASU and NAU, and among professional staff at NAU. Blacks are underrepresented in all other categories, but the differences are not great, except among professional staff at ASU.

Asians as a group have the best representation in Arizona's universities. The only underrepresentation is among administrators at ASU and UA, and among professional staff at UA, although the latter difference is practically negligible. The strongest representation of Asians is among faculty at ASU.

Minority Faculty Tenure Status

The status of "tenured faculty" may be seen as a measure of the intent to retain faculty who have demonstrated their competencies in the judgement of their peers. Faculty may be hired with tenure status, or they may be awarded tenure after a probationary period. Faculty "on track" may expect to be evaluated for tenure, while faculty "not on track" may not.

Table 13 arrays the tenure status of minority faculty by university and ethnicity. A first comparison may be drawn between the total minority faculty column ("Min.") and the column listing the tenure status of all faculty ("Employ."). NAU and ASU have larger overall percentages of tenured faculty than UA, by about 10 percent. The percentage of tenured minority faculty equals the overall percentage of tenured faculty at UA, while at ASU and NAU there are marked discrepancies, of nearly 20 to over 40 percent.

The percentages of minority faculty who are on track are greater than those not on track in all three institutions and the percentages are relatively large, which signals the intent to consider a number of minority faculty for tenure in the future.

The patterns of tenured faculty status by ethnicity basically mirror those of the aggregate. The percentage of tenured Asian faculty at UA is unusually large, larger in fact than the overall percentage at UA. In some instances, the percentages of minority faculty who are on track are not always greater than the percentages who are not on track for some ethnic groups, which may make a reasonable approximation of equity for those groups more difficult to achieve. The total numbers of some groups are also very small, which echoes, perhaps more dramatically, some of the data discussed in the preceding section.

Faculty and Staff Hiring, Evaluation and Retention

"Framework" questions on faculty and staff hiring, evaluation, and retention may be grouped into two main categories that parallel similar questions about students: access and retention. The access questions cover issues of representation, identification, recruitment, and hiring procedures, and the nature of the relationships among the Affirmative Action Office, departments, and administrators. Retention questions address upward mobility, and acceptance and participation of minority personnel. Affirmative Action Officers from Arizona State University and the University of Arizona responded to the questions. There is no response from Northern Arizona University.

The first access question asks how minority representation among faculty, administrators, and support staff compare with minority representation in the student body, and if this representation is "consonant with the needs of minority students."

The UA respondent believes that the representation compares "similarly", but she thinks that "...an increase in minority faculty representation would perhaps better affect the adaptability and interests of minority students in the curriculum." Also, more minority faculty would help raise the awareness of majority faculty of presentations that reflect minority experiences. At ASU, the representation compares "unfavorably", and it is said not to be in consonance with minority student needs. "While a comparison of the percentages appears to be good, the ratio of the number of students to the number of faculty, four faculty to every one hundred students, is not as good as it could be."

Current institutional procedures for identifying, recruiting, and hiring minority faculty and administrators, the subject of the second access question, "need improvement" at UA and are "not as effective as I would like them to be" at ASU. Some departments at UA with strong commitments to diversifying their faculties have had some successes. "For other departments who are not actively diversifying, they should not be permitted to hire until they hire minorities except under exceptional circumstances." Lack of effectiveness at ASU is said to be because of federal laws and regulations: for example, it is not possible to require candidates for employment to identify their ethnicity, so some minority candidates may be overlooked. The ASU respondent believes that the procedures can be improved. ASU is currently "reviewing and revising policy that will provide maximum flexibility within the law to hire minorities."

Affirmative Action Officers at UA and ASU have ready access to all supervisory personnel, including department heads, and their recommendations on cases involving bias in recruitment and hiring carry "a great deal of authority" or are responded to "supportively." All hiring at ASU and UA concerns Equal Opportunity. Advice from the Affirmative Action Officer on Equal Opportunity hiring is "sought and weighed heavily" at UA, and the Affirmative Action Officer at ASU is "a major and regarded contributor" to hiring decisions.

The last access question asks if each department has assigned an affirmative action liaison with the central administration, and about the usefulness of this technique for maintaining communication on matters of policy and procedures. At ASU, the practice of assigning an affirmative action liaison "varies from department to department."

The ASU respondent thinks that the usefulness of the technique depends directly upon the liaison's authority. The University of Arizona is "in the process of establishing individualized departmental Affirmative Action Plans and identifying by college a full professor liaison to the office." The process will be in place during the Fall semester, 1988, and it is hoped that it will increase commitment to affirmative goals at the department level.

Retention questions in the Framework questionnaire deal with issues of evaluation and workloads, upward mobility, acceptance, and participation.

Special duties in guidance and leadership are frequently required of minority faculty, in addition to their regular duties. How much recognition of these special assignments is given in evaluating minority faculty for promotion and in assigning workloads are subjects covered in one of the questions. At UA, additional duties are weighed no differently than for majority faculty. The "impression" of ASU's respondent is there is a "range of some recognition to no recognition." Each department at ASU, and elsewhere in the university system, has considerable latitude in developing criteria for promotion and workloads, within general university guidelines. For upward mobility, ASU provides development and training programs and year-long internships, with particular emphasis on the minority population. The Provost's Office at UA provides workshops for minority faculty on promotion and tenure.

Participation by minority faculty, administrators, and professional staff in campus committees and other forms of appointed or elected governance can demonstrate acceptance of minority personnel as integral members of the university. At UA: "Minority faculty and administrators are most likely to be overextended through committee work. The demand for their representation outweighs the supply." The institutional leadership at UA has been advised of this problem by the Affirmative Action Officer and minority faculty. Whether or not minority personnel participate adequately at ASU is said to be a matter of opinion. Some minority groups feel that they should be represented on every committee, while others feel they serve on too many committees. At ASU, the demand also exceeds the supply: "Those who form committees find that attempting to place equal representation on a three or four person committee is impossible." In response to the question, "What positive roles do the institutional leaders play in fostering acceptance of minority personnel," UA reports that the Provost visibly includes minority staff as a "model of positive interaction." The institutional leadership at ASU fosters acceptance through informal and formal personal contact; the amount of participation depends upon individual leadership style.

Conclusions

Strong representation of minority faculty, administrators, and professional staff is important for several reasons. Minority personnel are needed as role models for students and colleagues, and their expertise and experience is invaluable. Diversity among university personnel also enriches the experience of everyone on campus.

There have been gains in hiring and promoting minority personnel in Arizona's universities in the past few years, but minorities are still underrepresented among faculty, administrators, and professional staff. There are some striking patterns of underrepresentation by ethnicity that need attention, especially among faculty. The patterns of representation do not always reflect the demographics of the state, and although some of the percentages look good for some groups, the numbers of persons are quite small in several instances. The identification, recruitment, and hiring of minority faculty, administrators, and professional staff could be improved, especially in departments that are not "actively diversifying." Some assistance may be found in the article, "Recruiting Minority Professors: Some Techniques That Work", in The Chronicle of Higher Education, February 10, 1988 (Heller 1988). The access and influence of the Affirmative Action officers appear to be good, but stronger links with departments, especially academic departments, would be beneficial.

There are differences in the percentages of tenured minority faculty compared with the percentages of all faculty that should be addressed, and in some cases the relative frequencies of faculty on tenure track and faculty not on tenure track are slightly out of balance. Policy that recognizes the extra contributions of minority personnel in guidance and leadership, and enhancement of professional development workshops, mentoring, and internships would help in both retention and promotion.

CONCLUSIONS

Demographic projections of Arizona's population indicate a dramatic increase in the percentages of two major ethnic minority groups -- Hispanics and

American Indians -- within the next decade. The existing patterns of education show that there are major deflections of Hispanics, American Indians, and Blacks from the educational stream, particularly at the transitions or junctures between educational levels, and in the percentages of minority graduates from universities in the state.

Arizona, with its unique blend of minority cultures, has an unparalleled opportunity to demonstrate its ability to develop and implement model programs of minority education. Although successful efforts are underway at all educational levels, meaningful progress requires a comprehensive, integrated, and unified plan for minority education.

In 1983, the three university presidents appointed "The Arizona Universities' Study Group on Minority Student Recruitment and Retention" at the request of the Arizona Board of Regents. The Study Group identified major issues affecting minority student recruitment and retention, and recommended 19 actions to improve minority education in the state. The university presidents responded to the study, and the Arizona Board of Regents subsequently passed a resolution in October, 1984, that incorporated the intent of the Study Group recommendations.

The fundamental issues have not changed, however. The universities have expanded their minority student recruitment and retention programs, especially in the last two to three years, and some of the programs that have been evaluated are successful, but the overall outcomes are still unacceptable.

The issues of minority education in Arizona, and the appropriate responses to these issues are clearly understood. The universities must act upon this understanding and be held accountable for the outcomes. Fragmented efforts, regardless of quantity, will not suffice; the universities must assign the highest priority to minority education and effectively coordinate their energies in meeting well-defined goals and objectives.

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Figure 3. The University Retention Environment

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                       THE SERVICE COMMUNITY

                    Community Service Programs

      ****************  Early Intervention  ************
      *                                                *
      *                    Financial Aid               *
      *                                                *
      *                                                *
************                                     ****************
Intellectual               Advising &            Social & Cultural
Integration                 Mentoring            Integration
-----------                                      ---------------
Academic                                         Sensitivity
Support                    Career
Services                    Counseling

Curriculum                                       Social Life
                           Monitoring &
************                Evaluation           ****************
      *                                                *
      *                                                *
      *                                                *
      *                                                *
      *                                                *
      **************  Graduation & Placement  **********

                    Community Service Programs

                      THE SERVICE COMMUNITY
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APPENDIX A

FRAMEWORK QUESTIONNAIRE

TASK FORCE ON EXCELLENCE, EFFICIENCY AND COMPETITIVENESS
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Representative Joe Lane
William E. Nelson
Donald Shropshire
Ralph Watkins

Robert MacVicar
Executive Director

January 22, 1988

Dear Colleague:

As you know, the Arizona Board of Regents has appointed a Task Force on Excellence, Efficiency, and Competitiveness to review and make recommendations concerning the operations of the three Arizona universities. Minority student access to and persistence in higher education is among the seven major issues identified for study.

We are especially interested in current access and persistence efforts, and the institutional commitment to minorities. Over ten years ago, a planning group of the American Council on Education developed a "Framework for Evaluating Institutional Commitment to Minorities: a Guide to Institutional Self-Study". We have chosen to use a modification of this instrument to help in our assessment.

The questions are designed to stimulate thoughtful responses in each of eight institutional sectors: Admissions; Financial Aid; Counseling, Educational Support, Advising, and Placement; Academic Affairs; Student Affairs; Graduate and Professional Schools; Affirmative Action; and Central Administration. The questions for each sector are different, but all are designed to be more descriptive than prescriptive. We envision a report that presents and discusses the responses for each university separately, and in the aggregate, along with summaries and interpretations of interviews with minority faculty and students.

Please respond to each question in your area of responsibility with a few thoughtful and comprehensive paragraphs. We would be happy to receive any supporting documentation you care to include, and any additional thoughts, concerns, and suggestions. Each university is organized a little differently, especially in the areas of counseling, educational support services, and placement, so someone else may be in a better position to respond to certain questions. Please indicate who responded to each question, along with their title, to help us better understand the division of responsibilities within your institution.

Based on my schedule of visits to each campus, and allowing for about the two work weeks, we would like to have your responses by the following dates:

Northern Arizona University - February 12, 1988
Arizona State University - February 19, 1988
University of Arizona - March 4, 1988

Please send your responses to me at the Task Force Office address.

Thank you very much for your assistance in this extremely important endeavor. If you have any questions, please call.

Sincerely,

John J. Wood

John J. Wood
Task Force Staff Member

I. Undergraduate Admissions and Recruitment

A. Does the institution have a means of identifying minority persons interested in training offered by the institution? Is the method effective?

B. What is the nature of the relationships between institutional student recruitment personnel and counselors at secondary schools having large minority student enrollments?

C. Are these institutional means for facilitating the recruitment of minorities for disciplines in which they are under represented? Do these strategies include making special funds for recruitment, financial aid, and retention techniques available for these efforts? To what extent have the methods changed the distribution of minority students among the various disciplines?

D. Are admissions decisions on minority applicants made by persons who have sufficient experience and contact with minority student candidates to understand the special characteristics of their backgrounds, needs, and interests?

E. Are all applicants for admission judged by flexible criteria? How flexible are the criteria? Can admissions staff give less weight to test scores for students whose secondary school records and other data show promise?

F. Are information and materials made available to applicants which present an accurate picture of program requirements and campus life? What is the impact of the materials on student decisions to attend? Are minority students, faculty, and administrators consulted in an attempt to assess whether the overall image transmitted reflects the experience of minority students at the institution?

G. How does the proportion of minorities in the student body relate to the proportion of minorities in the geographical region(s) from which the institution mainly draws its students?

H. How does the proportion of minority students admitted under standard admissions criteria compare with the proportion of academically high risk minority students admitted? How closely are these proportions related to the institution's programs, purposes, and goals in student academic support?

I. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

II. Financial Aid

A. What priority is given in the use of institutional (non federal) student financial aid funds to supplementing student assistance from federal sources and providing full support for needy students?

B. What emphasis is given to ensuring that campus work assignments directly complement the student's educational program and career interests? Is this aspect of the financial aid package routinely evaluated for its effects on minority students? What changes in work assignment procedures have resulted from such evaluations?

C. Is it institutional policy to remind students that they must, and when they must, apply for financial aid? Is the reminder effective in obtaining on time applications from minority students? Is it necessary to keep funds in reserve for late applicants?

D. Are special packages (combinations of programs) of student financial aid offered to educationally disadvantaged and minority students? What means are used to determine the adequacy of the aid package in relation to the student's real needs?

E. Has a routine institutional procedure been devised to allow increases in an individual's financial aid package, should the need arise during the school session? Are discretionary funds available for emergency loans?

F. Are special technical assistance and counseling in budgeting matters given, as a matter of policy, to financially disadvantaged and minority students? How effective is this guidance in increasing the size and number of individual financial aid awards?

G. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

III. Counseling, Support Services, Placement, Advising

A. Is there an institutional effort to cooperate with secondary school administrators and counselors in increasing the scope and effectiveness of professional guidance? In this context, how are the particular guidance needs of minority students from various cultural backgrounds addressed? Are personnel at schools having substantial numbers of minority students involved in the process?

B. How much emphasis is placed on intensive early freshman orientation and preregistration counseling for minorities? Are these programs important factors in retention of minority students? Is peer counseling used in the programs, and how useful is it?

C. How important a role does career counseling (including guidance on graduate education) play in the design of institutional student support mechanisms? Do minority students use these support mechanisms advantageously?

D. Is there an institution wide attempt to ensure that the academic advisors assigned to minorities are sensitive to the emotional and academic needs and the cultural backgrounds of the minority student, especially during the first year of involvement with the institution? How is the effectiveness of the assignments monitored?

E. Are the study skills remediation and tutorial services provided by the institution commensurate with demand and need? Are all educationally disadvantaged students encouraged to attend these special programs? How, and how early, are students who need these services identified?

F. Do stigmas attach to students who participate in remediation programs? Is there an institutional effort to address this problem?

G. Are there support service courses (remedial, learning skills courses) for which academic credit should be awarded?

H. Are support programs that provide services to minority students staffed by regular faculty or by persons outside the regular tenure track? How is the competency of the staff judged, and how are high performance levels rewarded?

I. Do the directors of support service programs participate in administrative decisions that affect the students served by the programs? How influential is the advice of the directors? How are student insights obtained to inform these decisions?

III. Counseling, Support Services, Placement, Advising (Cont.)

J. What methods are used at the institution to measure students' academic progress and assess the effectiveness of support service courses? Does the institution administer academic competency programs or tests? How much is known about the academic progress of minority students at the institution? Are special academic support services provided for students for whom English is a second language?

K. Are remedial programs provided for undergraduates who fail to qualify by testing, or whose grade point averages are insufficient for admission to graduate or professional school? What influences do the programs have on later attendance at graduate and professional schools by minority undergraduates?

L. What aid is given to students in finding summer employment? What stress is placed on fitting summer employment experiences to the student's academic interest? Do minority students use the summer placement programs fully?

M. How is the institution's placement office monitored to ensure that minority students are treated with fairness, both in temporary student employment and in contacts with recruiters from business, government and industry? How are minority students encouraged to use the placement system? Are placement records of minority students maintained?

N. Can and should career counseling, academic advising, and placement functions be better coordinated throughout the institution? How has this matter been addressed by the personnel directly involved and by the responsible administrators?

O. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

EEC Task Force January 22, 1988

IV. Curriculum

A. How is the regular curriculum assessed for adequacy in study and analysis of works by minority authors and works focusing on minority concerns and experience? Are adequate means available for introducing more works of these kinds into the curriculum?

B. Do the institution's libraries and bookstores regularly carry publications by minority authors and publications devoted to minority issues? How is the completeness of inventories in this area verified?

C. How are changes in curriculum and teaching methods assessed to determine their influences on the education of minority students? Are the educational needs and interests of minority students used as the basis for revisions in curriculum and teaching methods? By what means are these needs and interests explored?

D. Is there an institutional mechanism for assessing the amount of undergraduate and graduate research being conducted on minority concerns? How can research of this type be encouraged?

E. How closely related are the subject matter and teaching methods of the regular curriculum to the subject matter and teaching methods of support service courses?

F. How successful are teaching techniques in support service courses introduced into the regular curriculum? How are faculty members encouraged to develop skill in using effective techniques?

G. How accepted, stable, and integral are ethnic and cultural studies at the institution? Are ethnic studies offerings properly publicized?

H. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

V. Environment

A. Are studies conducted on the causes of undergraduate and graduate attrition of minority students? Are the factors that influence minority student attrition fundamentally the same as or different from those affecting the majority?

B. How much emphasis has been placed on developing institution wide procedures to improve minority student persistence? What are the roles of administrative staff and department heads in this process?

C. Are minority students eligible for all scholastic honors awarded at the institution? How does the proportion of scholastic honors awarded to minorities compare with the proportion of minorities in the student body?

D. Are institutional programs conducted with department heads and faculty to reduce racially prejudiced attitudes and to increase interest in minority students and faculty? What are standard institutional responses when instances of prejudice have been detected?

E. Are there adequate and responsive complaint/grievance procedures available to all students? Do minority students use the procedures fully? Are channels available for discussing "minor problems (negative faculty attitudes, problematic dormitory relationships, etc.) before they become factors in student decisions to withdraw? Do "major" problems (especially forms of unfair treatment) receive a full and prompt hearing and resolution?

F. How are campus organizations monitored to determine whether they are congenial to minority students and whether minorities are encouraged to participate?

G. Is there a general institutional process by which the social customs and accepted rules of conduct on campus are reviewed for their receptiveness and congeniality to minorities?

H. How much participation is there by minority students in extracurricular activities such as music and drama clubs, social clubs, debating and service groups, newspaper and yearbook staffs, and intramural sports? What efforts are being made to increase minority participation?

I. What institutional procedures ensure that student entertainment and activity programs include appropriate amounts of literature, art, music, and lectures that feature minority artists and intellectuals, and which reflect the interests of minority students?

V. Environment (Cont.)

J. Is it institutional policy to demonstrate concern for the welfare of minority communities in the region through operation of various community service programs? How are minority students and faculty involved in these programs?

K. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

VI. Graduate and Professional Programs

A. How successful are the procedures that are used to identify minority students interested in graduate or professional training offered by the institution? Should identification methods be coordinated throughout the institution?

B. Is there agreement between the graduate school and the departments on the minimum qualifications acceptable for students recruited for graduate programs? How flexible are the criteria used to judge candidates for admission? How much restriction do existing admissions criteria place on obtaining an acceptable enrollment of minority students?

C. How much emphasis is placed on building minority student attendance in departments in which minorities are under-represented? Are special recruitment and financial aid funds available for this purpose?

D. Are institutional policies clear on whether minorities will be assured equal treatment and nondiscrimination or be accorded compensatory or affirmative action?

E. How large a role should remediation techniques play in graduate or professional training at the institution? What effect would remedial programs have on retention of minority students?

F. How adequately are the regular student services attuned to the needs of graduate and professional students? Do minority graduate and professional students use these services fully?

G. Should special student services be available to graduate and professional students? How can minority graduate and professional students be most effectively given the support which they need in such areas as, financial counseling and aid, student employment, guidance, placement housing services, and grievance procedures?

H. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

EEC Task Force January 22, 1988

VII. Faculty and Staff Hiring, Evaluation, and Retention

A. How does the minority representation in faculty, administration, and support staff compare with the minority representation in the student body? Is the extent of minority representation in faculty, administration, and staff consonant with the needs of minority students?

B. How effective are current institutional procedures for identifying, recruiting, and hiring minority faculty and administrators? Can these procedures be improved?

C. Do affirmative action officers have ready access to all supervisory personnel, including department heads? How much authority is carried by officers recommendations on cases involving bias in recruitment and hiring of faculty, administration, and support staff?

D. How much input is sought from affirmative action officers when administrative decisions are made on hiring policies that do not concern equal opportunity? How much influence does the advice of officers contribute to these decisions?

E. Is a person in each department responsible for departmental affirmative action liaison with the central administration? How useful is this technique for maintaining communication on matters of policy and procedures?

F. What authority do affirmative action officers have to intervene in possible cases of bias in admissions procedures, and in recruitment and hiring procedures for students?

G. In evaluating faculty members for promotion, how much recognition is given to special duties in guidance and leadership that are frequently required of minority faculty and administrators in addition to their regular duties? In setting work loads for minority faculty and administrators how much consideration is given to these extra commitments? Are professional development and training programs provided by the institution to aid the upward mobility of minority faculty, administrators, and staff?

H. Are minority faculty and administrators encouraged to understand that they are accepted as integral parts of the institutional community through adequate participation in campus committees and other forms of appointed or elected governance? How aware is the institution leadership of the perceptions of minority faculty regarding the congeniality, respect, and need of the other institutional personnel for their professional services? What positive roles do the institutional leaders play in fostering acceptance of minority personnel?

VII. Faculty and Staff Hiring, Evaluation, and Retention (Cont.)

I. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

EEC Task Force January 22, 1988

VIII. Administrative Policies

A. What is the balance between "soft money" and "hard money" in the overall funding of programs that are influential in attaining equal opportunity objectives? Is this a desirable long term balance?

B. How much priority is given to operating budget items for programs and staff to meet equal opportunity goals at the central administration and department levels? In this context, to what degree is consideration given to support services, including required increases in faculty contact time with students?

C. Where are student support services placed in the institutional governance structure, and what factors determine their placement? Are the services that focus on minority student access and persistence placed in the most stable and influential sector of the governance structure?

D. How much information is routinely collected on minority students concerning the applicant pool, admission rates, major fields of study, transfer among disciplines, and persistence and graduation rates? Are the amount and kinds of information collected commensurate with the needs for policy decisions?

E. To what extent are attempts made in the conduct and analysis of institutional research and in data collections on students and staff, to examine minority concerns through use of appropriate categories and issues? How is minority advice on these concerns solicited? Are the distinctive concerns of various minority groups handled in ways that are appropriate to their differences?

How are institutional data on minority students and staff distributed among staff and partners, particularly whenever policy decisions that affect the status of minorities are being made? Do the appropriate data regularly receive the widest distribution necessary?

G. What is the nature of interchange between institutional personnel and representatives of the minority communities served and affected by the institution? What mechanisms exist for obtaining advice from members of the minority community about programs that directly or indirectly interact with the community?

VIII. Administrative Policies (Cont.)

H. How many minorities in the administration have high level positions and regular line responsibilities? How strong are their influences on administrative policy decisions that affect the welfare of minority students, faculty, and staff? Do the upper echelon minority administrators have ready access to the institutional head and a proper access to the board of trustees?

I. How clear an understanding to the institutional leaders - board of trustees, institution head, and upper echelon administrators - have of the problem areas in the institution's response to minorities? Do they feel that they are performing satisfactory jobs in assisting minorities toward equal educational opportunity at the institution?

J. How is the status of minority participation in the entire institution regularly reviewed? How are student and faculty inputs obtained?

K. In your area of responsibility, what are the barriers to minority student access and persistence? What can be done to remove or positively alter these barriers? Do you or your staff have a strategic plan for removing or positively altering the barriers to minority access and persistence?

APPENDIX B

THE MADISON PLAN EXECUTIVE SUMMARY

The Madison Plan Executive Summary

University of Wisconsin–Madison
February 9, 1988

The keys to the University of Wisconsin–Madison's success have been its accessibility and educational excellence. If UW–Madison is to continue its traditions of success, it must embrace those who are gravely underrepresented in our community.

The Madison Plan, the result of much study and many contributions by students, faculty and staff, is the first response to the Final Report of the Steering Committee on Minority Affairs presented December 1, 1987. But it also is a broad response to critical and daunting national issues.

The Madison Plan was conceived to address the University's need for diversity in a timely and comprehensive fashion. It proposes changes and improvements designed to make significant progress in attracting and retaining minority students, faculty and staff. It details changes that enhance ethnic diversity in curriculum as a crucial element of educational excellence, and offers a vision that promotes an ethnically diverse, non-discriminatory environment on campus.

The Madison Plan states goals that can be measured and monitored, expanded and adjusted as institutional change takes place. A timetable for implementing the plan's initiatives has been set, and administrators have been assigned responsibility for overseeing each program. Progress reports will be issued at the end of each semester.

The University estimates that implementing the Madison Plan will require approximately $1.6 million for the 1988–89 academic year. The money will come from reallocation of existing resources. During this biennium, the University will not ask for additional state tax money. However, additional state and private support will be needed to sustain the plan's programs. Total public cost will be $4.7 million over 3 years.

Components of the Madison Plan are summarized below.

I. Student Financial Assistance

The Madison Plan provides a package of student financial assistance programs designed to reduce financial barriers to higher education for minority and disadvantaged students. The programs are:

FASTrack (Financial Aid Security Track Program). FASTrack will help low-income Wisconsin students, regardless of ethnic background, pay for college through a combination of grants, work and small loans. Single, financially dependent Wisconsin students will be eligible for the program based on family income and need for assistance to meet college costs. Both work and borrowing will be controlled in order to minimize the student's burden.

FASTrack plans to begin serving 150 new freshmen each year beginning in fall 1988. Within four years, an estimated 600 students will be served by the program, which assures that student financial needs will be met each year for four years, with a possibility of extension.

FASTrack will be funded through institutional loan funds and administered by the Office of Student Financial Aids.

Minority Merit Scholarships. The Madison Plan creates a coordinated program of school, college and university-wide merit scholarships for minority and disadvantaged students. The program, coordinated by the Vice Chancellor for Academic Affairs, will be more understandable and attractive to both students and scholarship donors. The University will seek $4 million in gifts to endow additional minority undergraduate scholarships.

Minority Graduate and Professional School Fellowships and Aid. More fellowships and other aid will be sought through public and private funding with a goal of securing 475 by 1992. The University will:

- Seek to double current state funding for Advanced Opportunity Fellowships with the goal of serving 400 graduate and professional school students.
- Seek a $4 million endowment through the Capital Campaign to fund 25 additional minority graduate and professional school fellowships.

Published by the Office of the Chancellor, 158 Bascom Hall, 500 Lincoln Drive, Madison, Wisconsin 53706.

I. Student Recruitment

The University will rebuild its recruiting program. Its goal will be to increase the number of new undergraduate minority students to 400 by 1993—more than double the number that began study this year.

The University, focusing first on its home state, will:

- Increase its presence in Wisconsin high schools beginning in the 1988–89 recruiting season.
- Improve outreach to Dane County minority students, parents and community leaders.
- Expand recruitment efforts in Milwaukee and other Wisconsin areas with significant populations of minority students.
- Use enrolled University students in minority recruiting efforts, and increase involvement of faculty and staff to personalize the admissions process.
- Increase alumni involvement in recruitment efforts.
- Identify areas in and outside the Midwest for minority student recruiting, using national admission test score search services to target students and schedule meetings with traveling university recruiters or alumni in the targeted student's area.
- Update and improve recruiting materials and information on campus programs and services.

III. Student Retention

Though progress has been made during the past 16 years, UW–Madison's retention of minority students still falls short of its goals. In addition to existing retention programs, the University will develop additional strategies:

- The University will create new Student Orientation programs tailored to the needs of all new students, with particular attention to minorities, transfers, commuters, returning adults, and disabled students. The Office of Admissions will enrich the SOAR program. The Dean of Students Office will add new activities for each Registration Week and fall semester.
- The University will establish a campus-wide program beginning in fall 1988 to track and assist minority freshmen and sophomores. The program will reach out to minority students and foster contacts and continued interaction with faculty and staff who have shown interest in being involved in regular, informal relationships with students. The Dean of Students Office and Vice Chancellor for Academic Affairs will consult with schools and colleges to determine the staffing and structural details of this program.
- The School of Business will establish a Tutorial Program for an initial 120 students interested in being admitted to the school. Minority graduate students will serve as tutors in areas such as statistics, economics and accounting.

IV. Reaching Out

The University will make special effort to strengthen programs to reach out to minority middle and high school youth, and initiate or expand programs for students and faculty at colleges and universities that have substantial minority populations. The University hopes to develop ten such relationships by December 1989 and another ten by the end of 1991.

The University will model such linkages on a relationship with Spelman College in Atlanta, a predominantly Black women's college. Students and faculty will be encouraged to attend UW–Madison summer research programs. The University also will seek to recruit students for its Graduate School, and urge faculty to spend sabbaticals at the University.

In addition, the University will:

- Enlist federal help to develop an Upward Bound program for Madison, cooperating with schools, parents and community groups. Upward Bound is designed to improve high school student retention and graduation rates of economically and academically disadvantaged students. A committee has been appointed to write a proposal for the program, expected to begin by July or fall 1989. An advisory board of parents, students, school officials and community representatives will be appointed for the program.
- Offer summer workshops for teachers whose students participate in the summer College Access Program, a program which acquaints middle and high school students with the University.
- Double the number of minority and disadvantaged students served by the Summer Collegiate Experience Program, an eight-week session that helps prepare admitted students for University study and campus life in the summer of their freshman year.
- Expand the Center for Health Sciences' Summer Enrichment Program, a two-week science and health awareness program previously open only to Madison-area minority middle school students, to include ten Milwaukee-area pupils.

The University is prepared to use its resources to join the Madison Metropolitan School District, its teachers and parents in an effort to improve minority achievement in Madison elementary and secondary schools.

The University also is interested in developing educational partnerships with South Madison school children and parents.

The University Dean of Students Office also will enter a partnership with the Madison Urban League and Chamber of Commerce to study the feasibility of creating a community support program—"Host Family Project"—for new out-of-state minority students.

V. Faculty Recruitment and Retention

The Madison Plan includes efforts to recruit and retain more minority faculty and staff, measures that will be critical to achieving a richer and more diverse educational environment.

The University's goal is to hire 70 minority female and male faculty by the end of 1991. It hopes to hire 25 tenured faculty over the three years and 45 tenure-track faculty at a rate of 15 each year.

To reach these goals, the University will:

- Fill faculty vacancies due to retirement or resignation and new positions created by the 1988–89 budget with qualified minorities whenever possible.
- Work with Deans and departments to ensure minority recruitment receives top priority.
- Seek to draw at least 10 minority faculty as visitors to fill available positions while the hiring process for those positions is underway.
- Renew and develop faculty programs with five institutions by December 1989.
- Publish a handbook containing strategies for expanding the pools of faculty applicants. An April 9 workshop for Deans and department chairs also will address this subject.
- Pledge a supportive environment for nourishing minority faculty careers.

VI. Academic Staff Recruitment and Retention

The Madison Plan recognizes the role of academic staff in instruction, research and in many facets of student life. The University will emphasize the hiring of minorities for staff positions across the spectrum of University operations.

In addition to strengthening and broadening professional development programs, the University will:

- Make available funds to conduct nationwide searches for selected staff positions. The University's goal is to hire or promote 125 minorities to these positions during the next three years.
- Recommend that the Academic Staff Assembly establish a standing permanent committee on affirmative action to develop policy on the recruitment and retention of academic staff. The committee also would be asked to assess existing minority staff morale and recommend improvements.
- Identify 25 classified staff positions for open recruitment that would improve minority staff chances to compete for the positions.
- Review the selection and appointment process for women and minorities to senior administrative positions.

VII. The Curriculum: Ethnic Studies Requirement

The Madison Plan proposes to add an ethnic studies credit requirement for all undergraduate students to help them more easily recognize, understand and appreciate cultural differences throughout the country and world.

- The goal is to institute the requirement by fall 1989. It is recommended that the credit requirement be fulfilled with existing and expanded course offerings.
- The University will designate a coordinator and committee to create a multi-disciplinary course built around the theme of "understanding other cultures," to be offered beginning in spring 1989. Scholars from UW–Madison and elsewhere will help students gain comprehensive understanding of cultural issues and the experiences of minorities.

The report notes this multi-disciplinary lecture format was tried successfully in 1950s social and ethical issues classes.

The Faculty Senate's Committee on the Academic Affairs of Minority and Disadvantaged Students and academic planning councils will be asked to develop a working definition of ethnic studies and procedures for assessing the ethnic content of courses.

In addition, up to 15 grants will be made available in summers 1989, 1990, and 1991 to faculty who wish to design undergraduate ethnic studies courses or develop the material to be presented in them.

Instructors will be urged to review their existing course outlines for opportunities to discuss pluralism, ethnicity, gender, and class.

VIII. Multicultural Center

The University has appointed a committee of faculty, students and staff to make decisions before April 15 on the logistics for creation of a campus multicultural center.

During planning for a center, the University will double the Multicultural Fund allocation to $100,000 a year.

The University requires that any center design meet these conditions:

- It should combine social and academic functions that promote cultural appreciation and knowledge, and foster student, faculty and staff interaction.
- It should create an environment that encourages communication among all campus cultures so it is not perceived as a special service for minority students.
- It should actively involve students, faculty and staff from the entire University community.

IX. Non-Discriminatory Environment

The Madison Plan recognizes that the University must maintain a climate which is not intimidating, hostile or demeaning to anyone.

The Madison Plan contains several initiatives to address student conduct while recognizing students' constitutionally protected freedom of speech:

- The Student Conduct Policy Committee will be asked to advise by April 15 whether to broaden student disciplinary policy to impose special or more severe penalties when violations of existing student conduct rules involve race, color, creed, gender, age, sexual orientation, disability, national origin or ancestry.
- The Dean of Students Office will immediately establish a non-disciplinary mediation and counseling program to deal with conduct alleged to be demeaning or harassing on racial or other grounds.
- The Wisconsin Student Association will be asked to take primary responsibility for the development of substantive written standards of conduct by student organizations and procedures for discipline of those groups.

The plan also contains several initiatives to address harassment of students by employees on the basis of race, color, creed, sexual orientation, gender, age, disability, national origin or ancestry:

- The Faculty Senate and Academic Staff Assemblies will be asked to adopt harassment policies. The University will work to have similar policies enacted prohibiting harassment of students by teaching or project assistants.
- A statement directing employes to refrain from discriminatory or harassing conduct will be distributed to all University employes.
- The Dean of Students Office will be assigned to receive written harassment grievances and act as a liaison between student and the University until the matter is resolved.
- Each college of the University will be asked to develop and advertise a student grievance procedure.

TABLES AND FIGURES

Table 1
Arizona Universities
Primary State Service Areas in 1986* and Percentages of New Students Who Were Freshmen Arizona Residents in 1984**

Primary Service Areas in 1986			% Freshmen Ariz. Residents 1984	
ASU				
Total			2080	
Maricopa	1820	88%		56%
		88%		
UA				
Total			2178	
Pima	1091	50%		
Maricopa	742	34%		69%
		84%		
NAU				
Total			1240	
Maricopa	574	46%		
Coconino	171	14%		
Pima	134	11%		
Navajo	71	8%		78%
		79%		

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*Counties of origin of Arizona high school graduates enrolled in Arizona public institutions, that account for at least 75% of the total enrollment. Source: MacVicar (1988).

**Source: Bartram and Gebel 1988

Table 2
Arizona
University Enrollment Compared With Community College Enrollment and Estimated High School Graduates

			Fall 1987				Sp.1987		1986-87	
Ethnicity	NAU		ASU		UA		C.College		H.S.	
White	11108	85%	36525	89%	23751	76%	98871	76%	21288	72%
Hispanic	794	6%	2101	5%	2198	7%	14584	11%	4946	16%
Am.Indian	742	6%	480	1%	276	1%	4691	4%	1855	6%
Black	174	1%	872	2%	482	2%	2977	3%	1130	4%
Asian	86	1%	1076	3%	828	3%	2341	2%	436	2%
Unknown	20	<1%	—		3730	12%	5557	4%	--	
Totals	12924		41054		31265		130021		29555	
Total Minority	1796	14%	4529	11%	3784	12%	25593	20%	8267	28%

University headcount enrollments exclude international students. The ASU "Other" category is listed as here as "White". Percents are rounded to the nearest whole number.

Sources: ABOR Minority Recruitment & Retention Report, 1987; AzCommunity College Board, Annual Reort, 1986-1987; Bartram and Gebel 1988.

Table 3
Arizona Universities
Minority Enrollment Trends Fall 1983-1987

University/ Ethnicity	Net Change in Headcount	Net Change in % Total Headcount
UA		
Hispanic	+442	+1.0
Am. Indian	+ 28	0.0
Black	+74	+0.1
Asian	+413	+1.1
ASU		
Hispanic	+351	+0.6
Am. Indian	+56	0.0
Black	+50	-0.0
Asian	+256	-0.5
NAU		
Hispanic	+150	+0.3
Am. Indian	+138	+0.3
Black	+ 9	+0.1
Asian	+4	-0.1
COMBINED		
Hispanic	+943	+1.9
Am. Indian	+222	+0.3
Black	+133	0.0
Asian	+673	+1.5

Source: ABOR, Minority Recruitment and Retention Report, 1987.

Table 4
Arizona Universities
Headcount Enrollment, Freshman Class 1986

Ethnicity	NAU		ASU		UA		COMBINED
Hispanic	120	6.7%	270	5.3%	337	8.4%	727
Am. Indian	109	6.1%	65	1.3%	52	1.3%	226
Black	33	1.8%	161	3.2%	68	1.7%	262
Asian	10	0.5%	156	3.1%	102	2.5%	268
White	1512		3399		4911		
Other	4433		58		4491		
Total	1784		5085		4016		10885

Sources: NAU Fall 1987 Undergraduate Enrollment Report;
ASU University Office of Institutional Analysis
Persistence and Graduation Summary, S.A.R.E.T.O, UA, 1/27/88.

Table 5
Arizona Universities
Minority Enrollment Underrepresentation Simulation

Ethnicity	A. Combined Fresh. Class 1096 %	#	B. Est. HS Grads 1985-86 %	C. Number for parity #	D. (A-C) #
Hispanic	6.7	727	15.7	1709	-982
Am. Indian	2.1	226	6.3	686	-460
Black	2.4	262	3.2	348	-86
Asian	2.5	268	1.3	142	+126
White+ Other	86.4	9402	73.5	8000	+1402
Total		10885			

A. Based on figures in Table 4;

B. Calculated from the percentage distribtion of the 12th grade class, Arizona State Department of Education, 1985-86 Annual Report;

C. B/100 * Total;

D. (A-C).

Table 6
Arizona State University
Persistence and Graduation of 1980 Class of "Native Freshmen"

		Number of years after entry				
Ethnicity	N	1	2	3	4	5
Hispanic	158					
Enrolled		55%	48%	45%	29%	18%
Graduated				1%	15%	23%
Retained		55%	48%	46%	44%	41%
Am. Indian	36					
Enrolled		44%	28%	28%	31%	11%
Graduated					3%	14%
Retained		44%	28%	28%	34%	25%
Black	75					
Enrolled		61%	51%	48%	25%	8%
Graduated					12%	20%
Retained		61%	51%	48%	37%	28%
Asian	67					
Enrolled		82%	63%	69%	34%	10%
Graduated					24%	43%
Retained		82%	63%	69%	58%	53%
White + Unknown	3083					
Enrolled		72%	61%	55%	23%	10%
Graduated				2%	30%	42%
Retained		72%	61%	57%	53%	52%

Source: ASU University Office of Institutional Analysis

Enrolled:	"Students who were enrolled during the fall semester of the specified year"
Graduated:	"Students who graduated prior to the fall semester of the specified year"
Retained:	Enrolled + graduated

Table 7
University of Arizona
Persistence and Graduation of 1982 Class of "First-time, Full-time Freshmen"

		Number of years after entry				
Ethnicity	N	1	2	3	4	5
Hispanic	210					
Enrolled		68%	63%	55%	39%	21%
Graduated					12%	27%
Retained		68%	63%	55%	51%	48%
Am. Indian	36					
Enrolled		56%	31%	33%	31%	22%
Graduated					3%	14%
Retained		56%	31%	33%	34%	36%
Black	65					
Enrolled		62%	57%	51%	34%	14%
Graduated					10%	22%
Retained		62%	57%	51%	44%	36%
Asian	68					
Enrolled		84%	75%	76%	38%	24%
Graduated		84%	75%	77%	67%	70%
Retained		84$	75%	77%	67%	70%
White	2597					
Enrolled		74%	62%	60%	39%	16%
Graduated					17%	40%
Retained		74%	62%	60%	56%	56%

Source: PERSISTENCE AND GRADUATION SUMMARY, S.A.R.E.T.O 1/27/88

Enrolled:	"Students who were enrolled during the fall semester of the specified year"
Graduated:	"Students who graduated prior to the fall semester of the specified year"
Retained:	Enrolled + graduated

Table 8
Arizona Universities
Student Departure Rates (Percent Not Retained)
for Three Freshman Cohorts

Ethnicity/ University	N	Number of years after entry 1	2	3	4	5
Hispanic	70					
ASU	157	45%	52%	54%	56%	59%
NAU	70	34%	43%	54%	-	-
Graduated						
Retained		66%	57%	46%	51%	48%
Am. Indian	71					
Enrolled		46%	25%	24%		
Graduated						
Retained		46%	25%	24%		
Black 16						
Enrolled		75%	44%	44%		
Graduated						
Retained		75%	44%	44%		
Asian 4						
Enrolled		100%	75%	75%		
Graduated						
Retained		100%	75%	75%		
White960						
Enrolled		77%	59%	43%		
Graduated				.3%		
Retained		77%	59%	43%		

Source: NAU Institutional Research

Enrolled: "Students who were enrolled during the fall semester of the specified year"

Graduated: "Students who graduated prior to the fall semester of the specified year"

Retained: Enrolled + graduated

Table 9
Arizona Universities
Student Departure Rates (Percent Not Retained)
For Three Freshman Cohorts

Ethnicity/ University	N	Number of years after entry 1	2	3	4	5
Hispanic						
ASU	157	45%	52%	54%	56%	59%
NAU	70	34%	43%	54%	–	–
UA	210	32%	37%	45%	49%	52%
Am. Indian						
ASU	35	56%	72%	72%	66%	75%
NAU	71	54%	75%	76%	–	–
UA	36	44*5	60%	67%	66%	64%
Black						
ASU	75	39%	49%	52%	63%	72%
NAU	16	25%	56%	56%	–	–
UA	65	38%	43%	49%	56%	64%
Asian						
ASU	67	18%	37%	31%	42%	47%
NAU	4	0%	25%	25%	–	–
UA	68	16%	25%	23%	33%	30%
White						
*ASU	3083	28%	39%	43%	47%	48%
NAU	960	23%	41%	57%	–	–
UA	2597	26%	38%	40%	44%	44%

The three cohorts are ASU (1980), NAU (1984), UA (1982). See Tables 6-8.

* = Other

Table 10
Arizona Universities
Undergraduate and Graduate/Professional Degrees Awarded
1986-1987

	NAU		ASU		UA	
Ethnicity	UG	G/P	UG	G/P	UG	G/P
Hispanic	81 6.1%	12 2.7%	233 4.8%	63 4.4%	228 6.2%	43 2.5%
Am.Indian	47 3.5%	9 2.0%	36 0.7%	8 0.6%	13 0.4%	6 0.3%
Black	12 0.9%	3 0.7%	76 1.6%	18 1.3%	39 1.1%	9 0.5%
Asian	4 0.3%	3 0.7%	96 2.0%	33 2.3%	52 1.4%	30 1.7%
*White	1187 89.2%	414 93.9%	4401 90.9%	1299 91.4%	3320 90.9%	1630 94.9%
Totals	1331	441	4842	1421	3652	1718
Total Minority	144 10.8%	27 6.1%	441 9.1%	122 8.6%	332 9.1%	88 5.1%

ASU and NAU figures explicitly exclude international students

* = Other for ASU

Source: ABOR Minority Recruitment & Retention Report, 1987

Table 11
Arizona Universities
Trends in Bachelor Degrees Awarded to Minority Students
1982-83 to 1986-87

University/ Ethnicity	Difference in number of degrees	Difference in % of total degrees
UA		
Hispanic	+ 51	+1.6
Am. Indian	- 18	0.4
Black	+15	+0.3
Asian	+ 15	+0.5
ASU		
Hispanic	+ 70	+1.1
Am. Indian	+ 3	0.0
Black	- 3	-0.2
Asian	+ 11	-0.1
NAU		
Hispanic	+ 0	+0.6
Am. Indian	- 17	+0.6
Black	- 10	-0.5
Asian	- 7	-1.0
COMBINED		
Hispanic	+121	+3.3
Am. Indian	+ 32	+1.0
Black	- 28	-1.0
Asian	+ 9	-0.4

Source: Cotera (1987)

Table 12
Arizona Universities
Minority Percent of Total Administrators, Faculty and Professional Staff Compared with Percent Headcount Enrollment, Fall 1987

Ethnicity/ University	% Admin	% Faculty	% Prof. Staff	% Enrollment
Hispanic				
NAU	4.3	2.3	3.2	6.1
ASU	5.6	3.4	3.9	5.1
UA	5.5	2.2	3.9	7.0
Am. Indian				
NAU	2.1	1.2	2.4	5.7
ASU	1.2	0.7	5.1	1.2
UA	0.6	0.7	1.1	0.9
Black				
NAU	2.1	0.6	3.6	1.4
ASU	4.1	1.4	0.6	2.1
UA	1.3	0.6	1.3	1.5
Asian				
NAU	1.1	1.0	1.2	0.7
ASU	1.9	6.2	3.5	2.6
UA	1.5	2.9	2.5	2.7
Total Minority				
NAU	9.6	5.2	10.4	13.9
ASU	12.8	11.6	13.1	11.0
UA	8.9	6.4	8.9	12.1
*Total Numbers				
NAU	188	483	250	12924
ASU	486	1573	771	41054
UA	528	1956	2880	31265

*Totals do not include graduate assistants or associates.

Sources: ABOR WORKFORCE ARRAY BY EEO-6 JOB CATEGORY, NAU, 10/19/87
ABOR ASU UNIVERSITY TOTALS FOR ALL JOB GROUPS FOR PAY PERIOD ENDING 9/30/87
ABOR U OF A ACTIVE WORKFORCE, OCT., 1987
ABOR Minority Recruitment & Retention Report, 1987

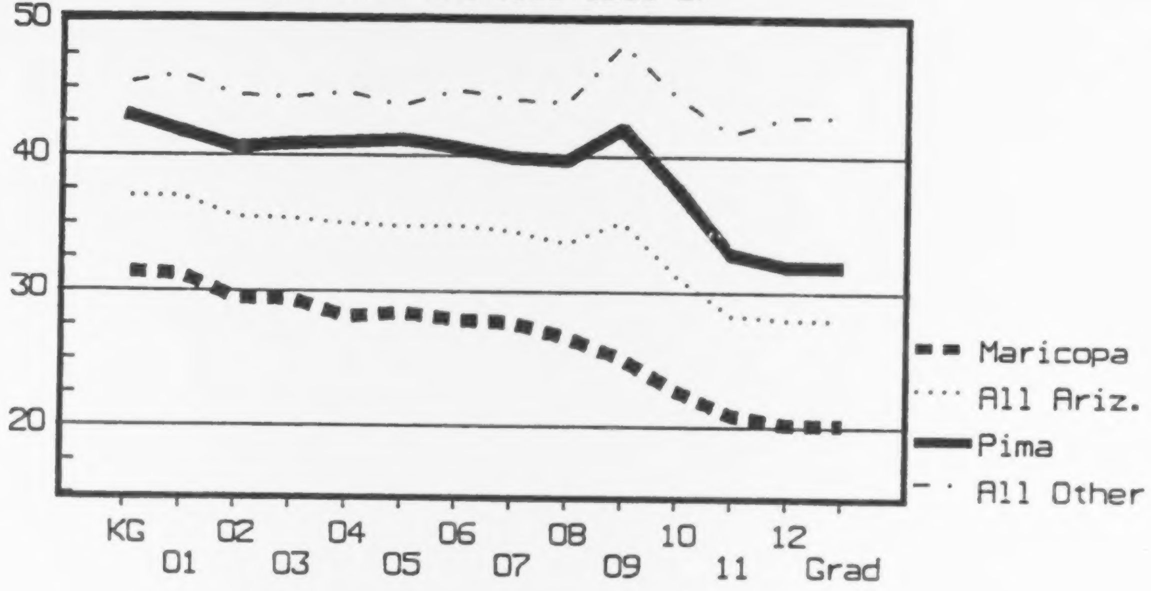
Table 13
Arizona Universities
Minority Faculty Tenure Status
Fall 1987

University/ Tenure Status	Hispanic	Am.Indian	Black	Asian	Total	
					Min.	Employ.
NAU						
Tenured	18%	17%	33%	20%	20%	62%
Not Tenured On Track	36%	67%	33%	40%	44%	19%
Not Tenured Not On Track	45%	17%	33%	40%	36%	20%
Total Number	11	6	3	5	25	483
ASU						
Tenured	51%	45%	45%	35%	42%	61%
Not Tenured On Track	28%	45%	45%	28%	31%	19%
Not Tenured Not On Track	21%	9%	9%	37%	27%	20%
Total Number	53	11	22	97	183	1573
UA						
Tenured	41%	54%	42%	60%	51%	51%
Not Tenured On Track	41%	23%	25%	30%	33%	23%
Not Tenured Not On Track	18%	23%	33%	11%	17%	26%
Total Number	44	13	12	57	126	1956

Totals do not include graduate assistants or associates

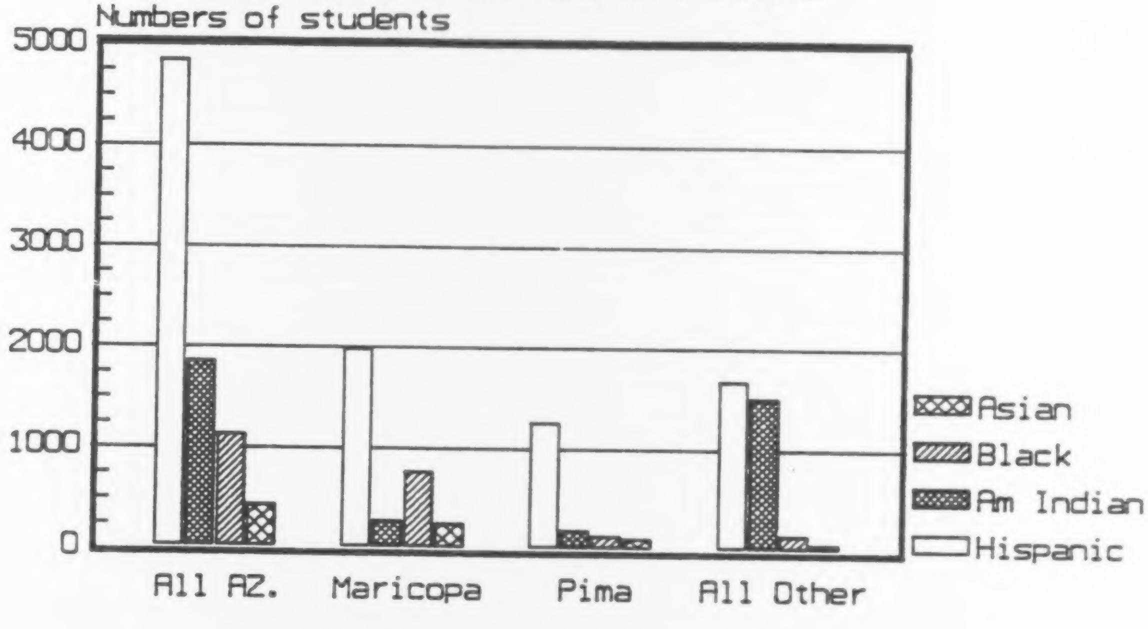
Sources: ABOR WORKFORCE ARRAY BY EEO-6 JOB CATEGORY, NAU, 10/19/87
ABOR ASU UNIVERSITY TOTALS FOR ALL JOB GROUPS FOR PAY PERIOD ENDING 9/30/87
ABOR U OF A ACTIVE WORKFORCE, OCT., 1987

Figure 1.
Percent Minority Public School Enrollment by Grade in Various Arizona Counties 1986-87



Source: Bartram and Gebel 1988

Figure 2.
Estimated Minority High School Graduates in Various Arizona Counties 1986-87



Source: Bartram and Gebel 1988

QUALITY OF UNDERGRADUATE EDUCATION

EVALUATION AND ASSESSMENT: A LITERATURE REVIEW (SUMMARY)

MARY J. TALBOTT AND KATHLEEN CHURCH

PURPOSE

The purpose of this paper is threefold:

(1) to present an overview of some evaluation frameworks that have been used in higher education,

(2) to present some approaches used in the assessment of quality, in reference to undergraduate education, and

(3) to identify issues of general concern that surround evaluation.

DEFINITION OF TERMS

Evaluation: While there are many definitions for evaluation, within the context of quality undergraduate education, two seem particularly appropriate. Worthen and Sanders (1973, p. 19) define evaluation as the "determination of the worth of a thing. It includes obtaining information for use in judging the worth of a program...or objective, or the potential utility of alternative approaches designed to attain specified objectives", Dressel (1976, p. 2) sees evaluation as both "a judgment on the worth or impact of a program, procedure, or individual, and the process whereby that judgment is made". Both definitions suggest that evaluation is considered to be both a JUDGMENT and a PROCESS.

ASSESSMENT

A dictionary definition of measurement is the act of measuring or the process of ascertaining the extent, dimensions, quantity of something especially by comparison with a standard. While the term assessment is often used interchangeably with measurement and evaluation, Anderson, Ball and Murphy (1975) suggest that assessment means more than measurement but has a narrower meaning than evaluation. They view assessment as the PROCESS of gathering the measurements and other subjective impressions and "fashioning them into interpretable form". Evaluation can then be made from the body of data gained through assessment. To be useful in the formulation of evaluations, assessment must be multidimensional.

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EVALUATION FRAMEWORKS AND APPROACHES TO ASSESSING QUALITY

There is very large body of literature on different theories, models and techniques for evaluation in higher education. Unfortunately, most individuals who are called upon to implement evaluation studies often have little background in evaluation theory or psychometrics. They have neither the time nor expertise to understand the terminology, much less the theoretical basis for a particular evaluation framework. With this problem in mind, Gardner (1977) presented a useful summary of five evaluation frameworks, four of which seem particularly relevant to the process of evaluating undergraduate education. He cogently highlights the characteristics, assumptions, advantages, and disadvantages of each approach (attachment 1). Gardner asserts that the frameworks correspond to different definitions of evaluation and credits Stufflebeam, et al., (1971) with identifying the first three categories. Scriven (1973) is credited with proposing the last category, goal-free/responsive evaluation. Each of the frameworks is briefly summarized below as are several approaches to assessing quality.

EVALUATION AS PROFESSIONAL JUDGMENT

"This approach is based on the assumption that the best judge of worth is an expert in the area of the thing being evaluated" (Gardner, 1977, p. 573). Examples of evaluation by professional judgment include peer evaluation of teaching, promotion and tenure committees, and accreditation teams. The methods used to collect information may vary but may include observation, survey information, interviews, component tests or review of documents. This information is then processed by the evaluator and some final report is issued. Although Gardner states that this type of evaluation is usually based on some form of personal contact between evaluator and the evaluand, one might include reputational studies in this category because the judgments about programs or institutions are made by experts in the academic community.

REPUTATIONAL VIEW

Reputational measures rely on the consensus of experts--faculty members, department chairs, deans etc., to identify the highest-quality programs. The information is often obtained through survey instruments. Reputational studies have been conducted at the graduate level (Hughes, 1925, 1934, Keniston, 1959, Carrter, 1966; Roose & Anderson, 1970), on professional schools (Blau-Margulies, 1973, Carrter 1977), and at the undergraduate level (Astin & Solomon, 1981). Tan (1986) includes a summary of some criticisms of reputational studies. They are as follows:

1. "What is actually measured by these studies is renown or reputation (Dolan, 1976; Lawrence & Green, 1980).

2. Bias is likely to occur if the raters are graduates of the program they are rating (Webster, 1981; Carrter, 1966; Lawrence & Green, 1980).

3. A program can be judged to be better in reputation than another only when they are compared on a relative scale (Tan, 1986).

4. Reputational studies have focused mostly on graduate programs in

the top 15-20 institutions in the country. Almost no information is available on teachers' colleges, secondary state universities, women's colleges, or predominantly black colleges (Petrowski et al., 1973; Conrad and Blackburn, 1985a).

5. Reputational studies have been criticized for establishing a pecking order among institutions of higher education (Lawrence & Green, 1980, Roose & Anderson, 1970).

6. Some studies have been criticized for not considering the institutional environment which can affect ratings (Astin & Solmon, 1981).

7. Additionally, some scholars argue that the reputational rankings do not reflect the current status and practice of departments because the rankings are based on past data and impressions (Lawrence & Green, 1980; Cox and Catt, 1977).

8. Astin (1982) has concluded that reputation as determined by reputational surveys is strongly correlated to three factors--SAT scores of entering freshmen, enrollment size, and size of the graduate faculty. It strains logic to automatically connect any of the three factors to quality undergraduate programs. As Astin states, Quality in this view, is whatever people think it is" (Astin, 1985. p. 25).

Despite the above criticisms, reputational studies have been informative about programs at the doctoral level (Tan, 1986). With methodological refinements, the use of multiple criteria, the use of normative standards of quality, and a focus on a wider range of institutions, reputational studies could be useful at the undergraduate, graduate and professional levels (Conrad & Blackburn 1985a).

EVALUATION BY MEASUREMENT

"To evaluate means to measure results, effects, or performance using some type of formalized instrument which produces data that can be compared to some sort of standardized scale" (Gardner, 1977, p. 578). Examples of this type of measurement are the use of SAT or GRE scores, attitude surveys, student evaluation of teaching questionnaires, etc. Significant assumptions are that the phenomena to be evaluated have measurable attributes, that there are instruments which can measure them and that there are standards for comparison.

Gardner (1977, pp. 578-9) stated that "The continuing debate over measurement of outcomes of higher education is a conspicuous example of the controversy which has resulted, at least in part, from attempts at applying this type of evaluation technique in the field of higher education." Notwithstanding this controversy, the measurement of outcomes has received a great deal of attention. Astin (1985) identifies the outcomes approach as one of the traditional views of assessing quality.

OUTCOMES MEASURES

The outcomes approach proposes that the ultimate measure of an institution's quality is in the quality of the product it produces. The quality of the product has been measured in a variety of ways, including, the proportion of fellowship winners (Knapp and Greenbaum, 1953), the lifetime earnings of alumni (Solmon, 1975), and the number of alumni who earned doctorate degrees (Knapp & Goodrich, 1952). Astin (1982) has criticized this form of approach to assessing quality because it is highly correlated to reputational measures. Further, Astin (1969) states that there is evidence to support the notion that most outcomes measures depend far more on the quality of students admitted than on the quality of the program or institution.

Ewell (1985) has reviewed the different type of student outcomes that can be measured. First, he distinguishes between cognitive gains (gains in knowledge) and changes in attitude. Second, he distinguished between changes occurring inside the student's head versus changes that can be observed. The final distinction made is between changes that occur while the student is in college versus changes that occur after college. Further, Ewell emphasizes the need to design an outcomes study based on the mission of the institution and the problems faced by the institution. Harris (1985) discusses various types of outcomes measures.

EVALUATION BY THE ASSESSMENT OF CONGRUENCE BETWEEN PERFORMANCE AND OBJECTIVES

"...evaluation as the process of specifying or identifying goals, objectives, or standards of performance; identifying or developing the tools to measure performance; and comparing the measurement data collected with the objectives or standards to determine the degree of discrepancy or congruence which exists" (Gardner, 1977, p. 580). The assumption made for this type of evaluation is that the most important decisions about the evaluand are contingent upon their performance in relation to the criteria established for judging the success or failure in attaining the objectives. Solomon (1981) stressed the importance of evaluating the stated goals or objectives in addition to the degree to which the goals are being attained. The generalized approach includes the seven elements listed below (Gardner, 1977, p. 580).

1. identification of goals or objectives for the thing to be evaluated
2. clarification of the variables which affect performance
3. identification of the criteria by which performance will be judged
4. development of tools, techniques, and procedures for collecting information regarding performance
5. collection of performance data
6. comparison of information regarding performance with the pre-established standards
7. communication of results to the appropriate audiences

A timely and specific example of evaluation as the congruence between performance and objective might be the "rising junior" examination. The goal in this case, is that a certain basic skill level must be achieved by a student prior to the undertaking of upper-division coursework. The most important and yet the most difficult aspects of the evaluation would be to clarify the variables that might affect performance and to identify the criteria by which performance will be judged. The power of the framework is that the data produced may have a "formative" and/or a "summative" role. The data collected can be used to improve the process in those cases where the overall goal is not reached (formative) and/or a decision is made about an individual student (summative). He or she may be excluded from upper division work. Harris (1985) discusses the art of writing institutional goals and the existing instruments for assessing basic skills, general education, major fields, and attitudes and behaviors.

GOAL-FREE/RESPONSIVE EVALUATION

"The central theme of this approach is the critical examination of the institution, project program, or thing, irrespective of its goals. In other words, the intent of goal-free evaluation (GFE) is to discover and judge actual effects without regard to what the effects were supposed to be." (Gardner, 1977, p. 583). The "goal-free" framework is especially useful when judging undergraduate programs in art, music or in other situations where a more holistic approach is required. A major strength of this evaluation framework is that the effort may produce valuable information if it is unencumbered by a lengthy list of goals. For example, the College-Level Academic Skills Test (CLAST) was developed as a part of educational reforms in the State of Florida (Ciereszko, 1987). All students are examined and must pass the test prior to progression to upper division instruction. A major goal of the examination was to increase the basic skills level of the young people of Florida. A side effect has been shown by a goal-free examination of data: fewer minorities have sat for the examination each year that it has been in place. Within a span of three years, there has been a 43 and 35 percent decline in Black and Hispanic test takers respectively (McCabe, 1987).

OTHER WAYS OF ASSESSING QUALITY

Several examples of assessing quality have been presented within the context of the evaluation frameworks. Whatever the evaluation framework(s) with which an institution chooses to work, the assessment of quality is a necessary component for the evaluation or judgment to be rendered. What follows are some additional forms of assessment that have been used or are proposed for use in the evaluation of quality undergraduate education.

VALUE-ADDED ASSESSMENT OF QUALITY

Value-added assessment examines actual and inferred changes in student's performance over time. Students are assessed for competencies upon entering an institution and are then reassessed upon completion of some educational experience (McMillian, 1986). The process attempts to arrive at the "net effects" of the college experience. Astin (1985, p.12) argues that "talent development" should be the goal of the institution and the institution should be judged on the size of positive net effects it has had on both students and faculty.

There is much debate in the literature on the value of "value-added" forms of assessment. Fincher (1985 cf. Pascarella, 1987) argues that problems center on: "(1) the development of reliable and valid instruments to measure various educational outcomes, 2) psychometric problems in assessing change, and 3) conceptual problems in interpreting college effects on achievement when most of the variation in achievement may be due to student aptitude, prior achievement and the ability of the student's learning effort rather than to instructional variables."

The assessment process involved can be expensive and time consuming. Nevertheless, a number of commercially prepared instruments exist that can be used for testing students upon entering the institutions and again after completing a course of study (see Harris, 1985). It should be emphasized that this approach to assessing quality, like other approaches, is multi-dimensional and can not be adequately addressed by a single indicator or instrument.

RESOURCES AS INDICATORS OF QUALITY

Astin (1985) and Tan (1986) have summarized the types of resources that have been used as indicators of quality including faculty, students, physical facilities and money. For example, Brown (1967) used a composite rating to rank order 1,121 institutions.

The eight variables that made up the composite score were:

(1) the proportion of faculty with the doctorate,

(2) the average salary and fringe compensation of faculty,

(3) the proportion of students continuing to graduate school,

(4) the proportion of graduate students,

(5) the number of volumes in the library per full-time student,

(6) the total number of full-time faculty,

(7) the faculty-student ratio, and

(8) the total expenditure per student.

Tan (1986) indicates a major problem with the above approach is in selecting the right combination of variables in the absence of a theory of quality.

Astin (1985, p. 43) has criticized the resource approach to the assessment of quality: "The symbiotic relationship between the reputational and resource views of excellence should also be borne in mind. That is, college faculties and administrators realize that recruiting more nationally visible faculty scholars and more National Merit Scholars and other highly able students will enhance the reputation of their institution. At the same time, an institution that can strengthen its reputation probably improves its ability to attract faculty members, students, and money. This close interplay between reputation and resources explains why measures based on the two conceptions are so strongly correlated." Other criticisms of the approach were summarized by Tan (1986, p. 252).

o Most studies have used faculty research productivity as the only measure of quality; therefore, faculty quality has been equated with program quality. Critics of this approach argue that faculty quality is not necessarily the same thing as program quality (Smith and Fiedler 1971; Liu, 1978).

o Many studies include only highly visible institutions in the sample (Conrad and Blackburn, 1985a).

o The studies have not come up

with a consistent set of objective measures that can be used to assess quality at a variety of institutions (ibid).

- These studies have failed to use multiple variables to assess quality.

UNOBTRUSIVE MEASURES OF QUALITY

Terenzini (1986) has argued that unobtrusive measures (see Bochner, 1979) should be included in any assessment of quality education.

Three categories of measurements are suggested:

(1) archives and records,

(2) observation, and

(3) physical traces.

For example, something important about student attitudes toward knowledge could be gained by examining records of student participation in student organizations that have specific academic purposes (e.g. Literary Club) as compared to organizations that have athletic or entertainment purposes. A sense of social responsibility might be gleaned by determining the number of students who are registered to vote. Analysis of transcripts, student retention rates, etc., may present meaningful pieces of data. Studies have been undertaken to examine student attitudes toward different races by observing seating behavior in dining rooms of residence halls (Campbell, Kruskan and Wallace, 1966). Finally, Ciardi (1970; cf Terenzini, 1986) suggested that the content of graffiti (an example of a physical trace) reflects the intellectual tenor of the campus. Terenzini (1986) presents ideas about how an institution might systematically use unobtrusive measures to examine quality components of organizations.

GENERAL CONSIDERATIONS, QUESTIONS, AND ISSUES

Questions, concerns, and issues frequently surround evaluation regardless of the specific method used to accomplish the evaluation. Many scholars have included discussions on such topics as the objectives, purposes, stakeholders, the kinds of information to be collected, and the costs. Cranton and Legge (1978, pp. 465-7) have summarized many concerns about both the process of evaluation and programs that are to be evaluated. Questions which should be answered prior to establishing evaluation frameworks are:

- Why is the evaluation being done? What will be done with the evaluation results? Will the results be used in a formative or summative manner? (If the evaluation has several purposes, do the purposes conflict?)
- What types of information are needed for the evaluation?
- What methodologies are required?
- What sources of information will the evaluation have access to?
- How much time will the evaluation take? What decisions need to be made? Are reports required, and if so, when? Who will get the reports?

- What personnel and resources are available to conduct the evaluation? Is the responsibility for the evaluation internal or external? (The external evaluator may be more objective, but the internal evaluator may know the programs and the institution more thoroughly.)

- Who is the audience for the evaluation results? And how will the results be presented?

With respect to the program to be evaluated, the following questions were posed by Cranton and Legge (1978).

- What are the program goals and objectives?

- How do each of the courses in the program work to meet these program goals?

- What teaching methods are currently under way?

- What innovations or projects are currently underway?

- How many students are usually involved in the program? Are there any characteristics of the students that are predictable, in terms of their academic background, the knowledge they have upon entering the program?

- Are there characteristics of the community setting that determine any aspects of the program?

- Are there any characteristics of the educational institution that influence the program?

- What events in the development of the program have influenced its nature?

The latter set of questions may be particularly helpful in reviewing strategies that are designed by individual institutions to assess the quality of undergraduate education. This list of questions is by no means exhaustive, but it highlights some of the issues that will emerge during the evaluation process.

SUMMARY

As the Task Force and its Staff seek, within a relatively short time and with limited resources, to evaluate the quality of undergraduate education, the complexity of the task becomes increasingly obvious. The preceding review provides a framework within which the specific processes to be used can be classified and pitfalls avoided. The approved work plan focuses on critical elements in the categories of: measurement of outcomes and attitudes, evaluation of process, evaluation by professional judgment by the use of consultants, and the impact of the evaluative processes currently in place on student and faculty behavior.

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ASSESSMENT AND OUTCOMES MEASUREMENT: STATEWIDE AND SYSTEMWIDE INITIATIVES

MARY J. TALBOTT AND KATHLEEN CHURCH

The Education Commission of the States (ECS) in cooperation with the American Association for Higher Education (AAEH) and the State Higher Education Executive Officers (SHEE0) conducted a survey of the states in December, 1986. Executive and Academic officers responded. A report, Assessment and Outcomes Measurement, A View from the States by Joni E. Finney and Carol M. Boyer, was issued in 1987 summarizing the results of the survey. The report addressed statewide and systemwide approaches to assessment and outcomes measurement.

Using the ESC report and information gained from other sources, we have grouped the activities of the states into six categories. The categories are useful because they assist one in organizing the vast amount of information available. The report which follows reorganizes the information contained in the ECS report. Many of the descriptions within the categories are taken directly from the report although quotation marks are not routinely used.

Two symbols are used throughout this summary that were not used by ECS. The double plus (++) indicates a program or effort that currently exists. The double dash (--) is used to indicate a program or effort that is under consideration or will be implemented at a future date.

ALABAMA

(No statewide or systemwide assessment programs exist.)

K-12 INITIATIVES

-- The state says it is particularly interested in early assessment programs that focus on high school students.

ENTERING STUDENT INTITIATIVES

-- The state says it is interested in basic skills testing of entering freshmen.

PERFORMANCE STANDARD INITIATIVES

-- The state says it is interested in tests of college-level skills.

-- The state says it is interested in general education assessment.

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INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

-- The state says it is interested in follow-up studies of graduates.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UDERGRADUATE EDUCATION

-- The state board hopes to recommend funding for pilot projects within the next two years.

++ The state is asking institutions for information on assessment activities and encouraging them to formalize their assessment programs.

ALASKA

PERFORMANCE STANDARD INITIATIVES

-- "Rising-junior" exams in reading, writing and Math are under consideration.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ Through surveys, Alaska collects information on graduates one year and again at five years after leaving the institution.

++ Alaska surveys students who drop-out after attending a state institution for one year.

INFORMATIONAL INITIATIVES

++ See "Initiatives Focusing On Graduates/drop-outs."

++ Alaska surveys students in preparatory and vocational institutions.

++ Alaska emphasizes its role in collecting and disseminating data and other information.

ARIZONA

K-12 INITIATIVES

++ The booklet "Ready for Success" is distributed annually to 8th and 9th grade students. The booklet explains new university admission requirements.

++ Arizona has developed a test booklet "Preparing High School Students for Arizona's Universities," that outlines basic skills in English, Math, social science and lab science necessary to be successful in college.

++ Beginning in 1987, new university admission requirements were instituted. The new requirements prescribe four years of English, three years of Mathematics, two years of laboratory science, and two years of social studies.

++ A high school visitation program provides free consulting services by university faculty to high schools that want to review their college-prep curricula.

++ A new service provides information to each Arizona high school about the academic performance of its graduates in freshman level Mathematics and English courses at the public community colleges and universities in the state.

PERFORMANCE STANDARD INITIATIVES

++ The Pre-Professional Skills Test (PPST) is administered to all teacher education candidates.

++ Remedial assistance is provided to students who do not score well on the PPST.

++ Each university has adopted new general education requirements for all baccalaureate degree programs.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Board of Regents directed each university to submit a plan, by May 1987, for assessing the quality of undergraduate education at their institution.

ARKANSAS

(No statewide assessment programs exist.)

ENTERING STUDENT INTITIATIVES

-- Basic skills testing of freshmen is under consideration.

PERFORMANCE STANDARD INITIATIVES

++ The Board of Education recently approved the PPST for teacher education candidates and a 2.5 GPA requirement for admittance to the program.

-- "Rising-junior" exams for assessing college level skills are under consideration.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ Considerable effort is being directed at implementing the recommendations of the Quality Higher Education Study Committee including the following: the appointment of several statewide committees to develop programs to assess students' skills in reading, oral and written communications, and mathematics; and the development of a core general education curriculum for all students receiving a baccalaureate degree.

CALIFORNIA

K-12 INITIATIVES

++ Both the UC and CSU systems are involved in diagnostic testing of high school students.

ENTERING STUDENT INTITIATIVES

++ Both the UC and CSU systems have placement testing in English, mathematics and writing.

++ The community colleges and independent institutions use a variety of assessment instruments, although no systemwide approach exists.

PERFORMANCE STANDARD INITIATIVES

++ The CSU system has a writing assessment requirement that must be satisfied in order to graduate.

-- "Rising-junior" exams, tests of critical thinking and general education outcomes are under consideration.

INITIATIVES FOCUSING ON THE ASSESSMENT OF QUALITY OF UNDERGRADUATE EDUCATION

++ Concurrent Resolution 141 directs the Postsecondary Education Commission to study various approaches to measuring and improving the quality of education. By March 1, 1987 a task force was to submit "findings and conclusions and, if appropriate, options for developing, implementing, and measuring talent development or value-added approaches to higher education, and performance-based budgeting incentives for encouraging the adoption of these approaches by public education institutions."

-- The use of attitude surveys are also under consideration in California.

COLORADO

ENTERING STUDENT INTITIATIVES

++ The Colorado Commission of Higher Education (CCHE) has defined five different tiers of admission standards. There is a single scale for admissions with different cut-off scores for the various tiers of institutions. Implementation of admission criteria will take place over the next three to five years.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ In 1985 the Colorado General Assembly passed a higher education accountability law (House Bill 1187) declaring that "institutions of higher education be held accountable for demonstrable improvements in student knowledge, capacities, and skills between entrance and graduation." In addition, the bill called for each Colorado institution to state its objectives for undergraduate education.

-- Beginning July 1, 1990, CCHE is authorized to retain up to 2% of an institutions appropriations if it has not implemented or is failing to implement any part of the accountability law.

CONNECTICUT

ENTERING STUDENT INITIATIVES

++ The Board of Governors for Higher Education requires institutions to conduct student assessment for placement.

PERFORMANCE STANDARD INITIATIVES

++ The State Department of Education requires teacher education candidates to take the Connecticut Competency Examination for Prospective Teachers (CONCEPT).

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Board of Governors for Higher Education requires institutions to assess institutional effectiveness.

-- In 1989 Connecticut will monitor student retention, completion rates, and subject-matter testing for teacher certification.

DELAWARE

(No statewide assessment programs exist. Rather, assessment is part of the broad issue of improving the undergraduate curriculum.)

INFORMATIONAL INITIATIVES

++ In the spring of 1987 a conference was scheduled to discuss the improvement of the undergraduate curriculum.

FLORIDA

K-12 INITIATIVES

++ Florida provides feedback to high schools about the preparedness of their graduates who attend two and four year institutions.

ENTERING STUDENT INITIATIVES

++ Florida has mandated the College Entry-Level Exam to screen and place entering students.

PERFORMANCE STANDARD INITIATIVES

++ Florida has mandated the College Level Academic Skills Test (CLAST) to measure students' mastery of basic college-level skills.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS See informational initiatives

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ A year-long study is under way to determine the impact of the testing and the appropriateness of the tests and cut-off scores.

INFORMATIONAL INITIATIVES

++ The State Board monitors licensure rates for various professions.

++ The State Board encourages colleges and universities to monitor student satisfaction and job placement.

GEORGIA

ENTERING STUDENT INITIATIVES

++ The basic skills examination/assessment for developmental studies is administered to students scoring lower than 330 on either section of the SAT. It is designed to place students in courses appropriate to their skill levels and to provide feedback about their academic preparation.

PERFORMANCE STANDARD INITIATIVES

++ The Regents' testing program is designed to screen and place students in the appropriate courses. All undergraduate students take the exam during their sophomore year and must pass it before graduation.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The State Board is urging institutions to assess general education outcomes as part of their accreditation reviews.

HAWAII

ENTERING STUDENT INITIATIVES

++ The University of Hawaii in Manoa administers a wide range of foreign-language tests to place individual students.

++ As of September 1987, all freshmen were required to take a placement exam in writing.

++ The community colleges administer diagnostic tests to all new students for placement in English and Math.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The state establishes policies guiding assessment of institutions and of student proficiencies at the department and program levels.

IDAHO

(No statewide assessment programs exist.)

ENTERING STUDENT INITIATIVES

-- Basic skills tests for entering freshmen are under consideration.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

-- Follow-up studies of college graduates are under consideration.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

NOTE: The public institutions have taken the initiative for the assessment of college-level skills and general education outcomes.

ILLINOIS

K-12 INITIATIVES

++ At the recommendation of the Committee on the Study of Undergraduate Education, a statewide program to provide feedback to secondary schools on selected measures has been established.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Board of Higher Education has charged the colleges and universities with the responsibility for the quality of undergraduate education. The Board will use common elements of campus-level assessment to monitor statewide trends. The Board's program review process is the primary mechanism for implementing and monitoring progress toward state goals. It is anticipated that student assessment will become an integral part of planning and resource allocation.

INFORMATIONAL INITIATIVES

++ A statewide data collection and reporting system is being implemented that will incorporate selected student progress and achievement measures.

INDIANA

K-12 INITIATIVES

++ The primary statewide assessment program is a pilot program to assess eighth and ninth graders. The Indiana College Placement and Assessment Center assesses students to determine whether they are performing at the appropriate levels in Math, reading and writing. The Center also attends to raising the educational aspirations of the students of Indiana.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The state is examining issues related to minority enrollment and reducing dependence on graduate teaching assistants.

++ Institutions are focusing on assessing the overall effectiveness of undergraduate education, monitoring attitudes of entering freshmen and conducting follow-up studies of graduates.

INFORMATIONAL INITIATIVES

++ The College Placement and Assessment Center provides feedback to individual students and their parents that reflects the student's interest in college, ability to succeed in college, and financial need.

-- Eventually the Center will serve as a clearinghouse for information on Indiana colleges and universities, information on courses, programs, financial aid, housing, and advanced-placement credits.

-- The Center plans to develop student profiles and to analyze data on who goes to college and why (February 1987).

IOWA

(No statewide assessment programs exists.)

PERFORMANCE STANDARD INITIATIVES

++ There is a pilot test under way to test teacher education candidates using the national teachers examination. Participation is voluntary.

KANSAS

K-12 INITIATIVES

-- Early assessment programs

designed to judge the readiness of high school students for college work are being considered.

PERFORMANCE STANDARD INITIATIVES

++ Kansas evaluates teacher education candidates using the PPST. Students must achieve a specific cut-off score and maintain a 2.25 GPA to be accepted into teacher education.

++ The University of Kansas has a five-year teacher education program that requires students meet graduate-school requirements for their fifth year.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ Each Kansas institution has recently submitted new role and scope statements.

-- The institutions have been asked to consider adopting outcome measures.

KENTUCKY

(No statewide assessment programs exist.)

K-12 INITIATIVES

++ Kentucky has initiated a study of high school students who completed the pre-college curriculum and those students who were admitted to public institutions without having completed the pre-college curriculum. The results will be provided to high schools.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The strategic plan for higher education identified several issues and initiatives related to assessment.

++ There is an effort to incorporate quality issues into program review.

-- Attention will be given to evaluating the retention of students from lower to upper division and the matriculation of students from undergraduate to graduate programs.

LOUISIANA

ENTERING STUDENT INITIATIVES

-- Basic skills testing of entering freshmen is under consideration.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Louisiana Board of Regents has prescribed general education requirements and outcome measures for all college graduates. Institutions are encouraged to develop outcome measures on their own.

-- The assessment of general education outcomes is under consideration.

MAINE

K-12 INITIATIVES

++ A statewide program tests fourth, eighth and eleventh graders to provide feedback to students on their skills.

ENTERING STUDENT INITIATIVES

++ Assessment programs in Maine are developed and implemented at the campus level; they include attitude surveys of entering freshmen.

-- There is an interest in developing basic skills tests for entering freshmen.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ Follow-up studies of college graduates are carried out at the campus level.

INFORMATIONAL INITIATIVES

++ In March 1987, the Chancellor's office for the University of Maine sponsored a systemwide conference on undergraduate education and assessment.

MARYLAND

K-12 INITIATIVES

++ Maryland provides feedback to high schools regarding the participation of their graduates as well as retention and completion rates.

PERFORMANCE STANDARD INITIATIVES

-- Maryland expects a new program, requiring institutions to establish comprehensive evaluation plans to assess higher-order skills, to be approved this spring. Each campus will select its own methods of assessment.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ Maryland conducts follow-up surveys of college graduates one and five years after graduation.

INFORMATIONAL INITIATIVES

++ Maryland surveys employers of Maryland graduates.

++ Maryland collects data on retention and completion rates in public institutions.

++ Campus reports include statistical profiles of campuses with regard to retention, minorities and accreditation.

MASSACHUSETTS

(No statewide assessment programs exist.)

K-12 INITIATIVES

++ The state has adopted the use of Carnegie units, specifying high school coursework for those students preparing for college.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The legislature is studying the condition of teaching, and assessment activities may be developed as a result.

-- The state will focus on the issue of general education in the coming year in response to concerns that professional programs and course requirements are being increased at the expense of general education.

MICHIGAN

K-12 INITIATIVES

++ The primary state-level program is the Michigan Mathematics Early Placement Test. Students take the test during their junior year in high school. The test is used to guide students in course selection and enhance communication and co-operation between high school and college Math teachers. Participation is voluntary, by school district.

++ The Martin Luther King, Jr./Rosa Parks Program has two components that focus on younger students. The program is designed to increase the number of minorities in higher education and in specific academic fields. It has a college outreach program, focusing on grades 7-10 in an effort to raise the educational aspirations of minority students; and a minority student recruitment program. The third component of the program is a visiting minority faculty program with state colleges and universities.

-- A writing program, with similar goals to the Math program, is under consideration.

PERFORMANCE STANDARD INITIATIVES

++ Michigan approved legislation that requires teacher education candidates to take both a basic skills test early in their careers and a subject-matter test prior to student teaching. The program will be implemented within the next three years.

MINNESOTA

K-12 INITIATIVES

++ Feedback is provided to the high schools as a result of the data collected during the post-high school planning program.

ENTERING STUDENT INITIATIVES

++ The state has a Post-High School Planning Program (PSPP) in which the PSAT is administered and career plans and interests are surveyed.

-- A plan to improve and expand the PSPP into a full-scale early assessment program is being considered.

PERFORMANCE STANDARD INITIATIVES

++ The State Board of Education requires all teacher education candidates to take the PPST.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ Minnesota has defined desired outcomes and the standards by which the achievement of those outcomes can be measured. The State Department of Education has developed statements of essential learner outcomes in several subject areas. The Higher Education Coordinating Board has drawn up a statement regarding college-level skills and the standards by which college-level work can be differentiated from remedial work. The Board has also developed associate degree standards and the next step is to develop standards for baccalaureate programs. The outcomes and standards will then be used as a basis for designing or selecting assessment tools and for restructuring the curriculum. Additionally, a task force has come up with a set of statements of outcomes for teacher education programs.

INFORMATIONAL INITIATIVES

++ On March 4, 1987, a joint hearing/seminar was held in the state capitol on the assessment of quality in postsecondary education.

MISSISSIPPI

PERFORMANCE STANDARD INITIATIVES

++ State-level teacher education assessment is required. The ACT-COMP test is required for entry into teacher education in public colleges and universities and is typically administered at the end of the student's sophomore year.

MISSOURI

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ Missouri has just launched a program that includes a longitudinal study of factors related to student performance. Using the American College Testing assessment data base, the study will identify characteristics related to student performance at specific institutions.

++ At a state conference in December 1986, the governor requested the Presidents of Missouri's public institutions to develop assessment programs and to submit the plans to his office by the end of 1987.

INFORMATIONAL INITIATIVES

++ The Missouri Coordinating Board of Higher Education sponsored a statewide conference on assessment and strengthening undergraduate education in December 1986.

MONTANA

(No state-level assessment programs exist.)

K-12 INITIATIVES

++ The Montana Board of Regents has initiated a college preparatory policy that has implications for the state colleges and universities. Effective for students graduating from high school in 1988, the policy recommends students take three years of Mathematics, four years of English, three years of social studies, two years of lab science, one year of visual or performing arts, and two years of a foreign language. Although the program is recommended for all high school students interested in attending Montana institutions, completion of the recommended course of study is necessary to be eligible for the Regents' high school honor scholarships, state-supported scholarships, fee waivers, or grants-in-aid based on academic achievement.

NEBRASKA

(No statewide assessment programs exist.)

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ The university system is involved in coordinating follow-up studies of alumni.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The state is working to facilitate the development of strategic planning for public institutions.

INFORMATIONAL INITIATIVES

++ Recently a study of retention was initiated to determine the impact of the new admissions standards adopted last year.

NEVADA

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ A proposal is being developed that will require each university and community college in the system to review, modify, and implement undergraduate assessment plans, based on its particular institutional mission.

NEW HAMPSHIRE

PERFORMANCE STANDARD INITIATIVES

++ Newly certified teachers are required to take the Pre-Professional Skills Test (PPST).

-- Use of the PPST during the teacher education program is being considered.

NEW JERSEY

ENTERING STUDENT INITIATIVES

++ The basic skills assessment program is designed to place students in the appropriate courses and to provide a statewide measure of basic skills proficiencies. The test is required after students are admitted but before they register for courses. Student participation is mandatory. All public and some private institutions are involved.

PERFORMANCE STANDARD INITIATIVES

See discussion of COEP below.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS See discussion of COEP below.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The College Outcomes Evaluation Program (COEP), introduced in 1985, is being designed to assess general education outcomes, including critical-thinking and other higher-order skills; to monitor student retention, satisfaction and job placement of college graduates and contributions to economic/community development. Student performance will be assessed for a sample of students across institutions at three points in time, namely, the beginning, middle and at graduation from college.

-- With respect to COEP, still under consideration are whether common statewide assessment instruments will be used and whether there will be performance criteria.

++ Competitive challenge grants from the governor's office have been used to establish pilot projects such as the one on assessment at Keane College.

INFORMATIONAL INITIATIVES

++ New Jersey is collecting information on minority enrollment and retention, with interest in assisting high-risk disadvantaged students.

++ New Jersey has sponsored several statewide conferences on assessment.

NEW MEXICO

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Commission on Higher Education and the State Board of Education are co-sponsoring a project to define competencies and skills required for success in college-level work. The project is aimed at improving the quality of student learning in elementary and secondary schools and in postsecondary institutions.

-- Competitive grants to implement worthwhile initiatives are under consideration.

NEW YORK

K-12 INITIATIVES

++ A state-level program assesses the readiness of high school students for college work.

ENTERING STUDENT INITIATIVES

++ The City University of New York (CUNY) system requires all students take a basic skills admissions test for placement.

PERFORMANCE STANDARD INITIATIVES

++ The CUNY system requires all students take an advancing or "rising-junior" exam.

NORTH CAROLINA

K-12 INITIATIVES

++ North Carolina has established minimum undergraduate admission requirements. A prescribed high school curriculum for college-bound students includes algebra I and II, geometry, three units of science (one laboratory, one biological, one natural), four units of preparatory English, and two units of social studies. Coursework in foreign language and additional mathematics is encouraged.

++ High school students are tested (end-of-course testing program) after completing courses in algebra, biology, English and other academic subjects.

++ State appropriations and foundation support are used to support demonstration projects.

++ A Math/science network program offers economically disadvantaged junior high and high school students intense academic counseling to encourage them to take college-preparatory courses.

PERFORMANCE STANDARD INITIATIVES

++ The Quality Assurance Program, established in 1983, requires all teacher education candidates to take the national teachers examination at the end of their sophomore year.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

See "Informational Initiatives"

++ North Carolina collects a variety of outcome measures and information at the state level. Three surveys and reports provide information to the institutions and the state.

(1) The College Graduate Survey is a follow-up sample survey of University of North Carolina students designed to learn about employment trends and satisfaction with their college experience.

(2) The Transfer Performance Report: provides information to all state institutions regarding the performance of transfer students in UNC-constituent institutions.

(3) The Retention and Graduation Report is a fall-to-fall report tracking various cohorts over a seven-year period and reporting results according to race and sex.

The state monitors SAT scores and course enrollments in high schools.

The state monitors licensing exams in law and nursing.

NORTH DAKOTA

(No statewide or systemwide assessment programs exist.)

K-12 INITIATIVES

-- Early assessment programs to assess the readiness of high school students for college work are being considered.

OHIO

K-12 INITIATIVES

++ Ohio has two early assessment programs, the Early Mathematics Placement Testing (EMPT) program and the Early English Composition Assessment Program (EECAP). The purposes of these programs are to give students constructive feedback about their academic preparation and to improve program and institutional performance. The EMPT is administered to high school juniors; student participation is voluntary. EECAP has retrained some 6,000 high school English teachers. All two- and four-year public institutions and some private institutions are involved.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Ohio Selective Excellence Program was introduced by the Board of Regents in 1985. Its primary purposes are:

(1) to ensure program and institutional accountability, and

(2) to improve program and institutional performance.

All two- and four-year public institutions, as well as some private institutions are involved. This program functions as a statewide assessment program.

OKLAHOMA

ENTERING STUDENT INITIATIVES

Oklahoma uses the ACT exam to admit and place students in state colleges and universities. The scores are used in conjunction with high school rank and grade-point average.

PERFORMANCE STANDARD INITIATIVES

++ Oklahoma tests all teacher education graduates prior to licensure. The test assesses subject-area knowledge in the major field.

++ In addition to the test for teacher education graduates, the State Regents for Higher Education is developing a basic skills test for teacher education applicants. The program is expected to be implemented in 1988.

-- A "rising-junior" or end-of-sophomore year exam to assess the outcomes of general education is under consideration.

-- A senior level test for all baccalaureate degree graduates is under consideration.

-- A value-added program for the freshman through junior or senior year is under consideration.

OREGON

K-12 INITIATIVES

++ In 1986, the State System of Higher Education introduced a required program of 14 academic course units for high school students entering public four-year institutions in the state. The program includes courses in Math, science, social studies and English.

++ The public schools offer a Math-readiness program for high school juniors. The program is voluntary and provides early feedback and intervention.

++ Oregon provides a systemwide freshmen academic-performance report that tracks all freshmen through their first year and provides high schools with feedback on the performance of their graduates.

ENTERING STUDENT INITIATIVES

++ At the state level, the SAT is required of all students interested in attending a state university or college. The test is used primarily for placement.

++ The University of Oregon and Oregon State University require a minimum score on the SAT test of standard written English. Unlike other public institutions, these institutions have no remedial writing programs.

PERFORMANCE STANDARD INITIATIVES

++ All teacher education candidates must pass the California Basic Skills Test, prior to their junior year.

-- A computer literacy test is under consideration.

-- Exit requirements that demand one year of competency in a foreign language for students entering the state system in 1989 and two years of competency for students entering in 1991 are under consideration. A foreign-language competency test is being developed for this purpose.

PENNSYLVANIA

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

NOTE: Because state higher education institutions are independent - even in the public sector, each institution assumes a primary role in assessment and related activities.

INFORMATIONAL INITIATIVES

++ The State Ddepartment of Education views its assessment role as one of program coordination and sharing of information.

RHODE ISLAND

K-12 INITIATIVES

++ A statewide feedback system has been developed to provide high schools with feedback on the performance of their graduates who enroll in public colleges and universities in the state.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ Measures of retention and completion, follow-up studies of graduates of Rhode Island public colleges and universities, and student and alumni reports on satisfaction with their college experience are expected to provide useful information on academic quality.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Board of Governors for higher education has adopted a series of procedures that all public institutions in Rhode Island must follow in reporting on efforts to improve quality. For example, outcome measures used by each institution must be reported.

-- Long-range plans include the possible development of criterion-based measures of academic quality.

SOUTH CAROLINA

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ South Carolina recently completed a comprehensive study of many aspects of higher education in the state. The commission recognizes the importance of maintaining the quality of academic programs and services. It believes the existing methods of statewide quality assessment, such as program review, are useful and therefore plans to continue them.

++ Each public institution has or is developing a quality assurance program that will be incorporated into its annual report to the Commission on Higher Education.

SOUTH DAKOTA

ENTERING STUDENT INITIATIVES

++ The "entrance assessment" program includes the ACT for all entering freshmen and the ACT-COMP exam for a random sample of entering freshmen. Those taking the ACT-COMP exam are re-tested at the end of their sophomore year.

PERFORMANCE STANDARD INITIATIVES

++ The exit assessment program includes the Graduate Record Exam (GRE), the National Teachers Examination, the Engineering-In-Training examination, and the ACT Student Opinion Survey. Institutions may use these tests to develop their own instruments. All exit examinations are required prior to graduation.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

-- South Dakota is trying to implement a system for monitoring the job placement of graduates, including whether students take jobs within the state or outside the state.

INFORMATIONAL INITIATIVES

SEE "Initiatives Focusing On Graduates/ Drop-Outs."

TENNESSEE

ENTERING STUDENT INITIATIVES

++ The Tennessee Board of Regents' campuses test entering freshmen through the state's college preparatory program. Its purposes are to screen and place students and to provide feedback to individual students regarding their academic preparation and performance.

++ The above program provides remedial and developmental instruction to students who lack the skills to be successful in college.

PERFORMANCE STANDARD INITIATIVES

See "Initiatives focusing on the assessment of the quality of undergraduate education."

++ All graduating students participate in a test of general education outcomes.

++ Twenty percent of all graduating seniors take the comprehensive examination in their major field each year. In addition, each major field is tested every five years, with all graduating students participating.

++ "Bragg Marks" set year-by-year targets for institutions. The benchmarks include ACT exam scores of entering freshmen, Graduate Record Examination scores, program completion rates for full-time students, licensure rates in certified fields, and ACT-COMP exam results.

INITIATIVES FOCUSING ON GRADUATES/DROP-OUTS

++ The alumni survey is administered annually to all baccalaureate graduates from a given year.

++ Job placement information is collected quarterly from all graduates of two-year institutions.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The performance funding program was designed to encourage institutions to use assessment activities and outcome measures to improve performance. This program provides additional funds for institutions that have integrated assessment into various programs and activities on campus. Statewide performance-based funding programs have included the assessment of general education outcomes, comprehensive examinations in the major field, surveys of alumni, and reports of job placement.

TEXAS

ENTERING STUDENT INITIATIVES

++ A Generation Of Failure, a report presented to the Coordinating Board in July 1986, recommended several strategies to prevent students from passing through Texas colleges and universities without mastering basic skills. The report states that all freshmen should be tested in reading, writing and Math at skill levels required to be successful in college. It was also recommended that counseling programs and nondegree credit remedial offerings be established. Reports on remedial program effectiveness will be submitted annually to the Coordinating Board.

PERFORMANCE STANDARD INITIATIVES

++ The Pre-Professional Skills Test (PPST) is required for all teacher education candidates. The test is administered prior to the junior year.

++ Teacher education graduates must pass a certification "exit" exam. Passage and failure rates on all required exams are published by institution.

UTAH

ENTERING STUDENT INITIATIVES

++ Institutionally designed assessment programs, with information shared systemwide, is Utah's approach to assessment. All institutions are required to be involved in pre-assessment or early assessment activities. The ACT exam is used at most institutions, along with other exams, to advise and place students, primarily in English and Math.

++ Some community colleges use examinations to assess the developmental educational needs of students prior to their matriculation into approved programs.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ There are a wide variety of institutionally designed assessment programs. The results of these institutional efforts will be reported to the commissioner's office and the Board of Regents, beginning in 1988.

VERMONT

(No state-level assessment programs exist.)

VIRGINIA

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ In 1985, Virginia's Council on Higher Education completed a study regarding the issue of assessment and the state. The Council recommended that each institution develop its own procedures for assessing student learning. The Virginia general assembly accepted this recommendation in 1986 and directed the Council to develop general guidelines for the institutions to follow. The assembly agreed that Virginia's institutions are highly diverse and that applying a uniform, standardized assessment instrument would not be appropriate.

++ A variety of programs are in use or under development by the 15 senior institutions and the community college system.

++ James Madison University is the designated pilot institution in Virginia. With support from the general fund and the Council's fund for excellence, it is developing a set of assessment techniques that can be modified by other institutions as needed.

++ The Council is working with the community college system to develop standards for developmental education, including assessment.

++ The Virginia Center for Innovative Technology and the State Council of Higher Education are monitoring applied research funded through the Center and its impact on the economic development in the state.

WASHINGTON

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The coordinating board will present a higher education plan by December 1, 1987, to the governor and legislature. This plan will probably include a focus on outcomes measures. Critical questions addressed by the plan will include what student outcomes should be measured and whether evaluation should be designed at the local level or developed on a statewide basis.

++ The Governor included in his 1988-89 budget request a proposal to fund a pilot "value-added" testing program at Western Washington University.

++ The governor has proposed support for a unique faculty development program at Evergreen State College.

WEST VIRGINIA

K-12 INITIATIVES

++ Some institutions are involved in early assessment of high school students regarding their preparation for specific university programs.

ENTERING STUDENT INITIATIVES

++ The ACT exam, which is used to screen and place students, is administered to prospective students prior to their admission to state institutions.

PERFORMANCE STANDARD INITIATIVES

++ In 1985 West Virginia implemented a teacher education assessment program. The first part of the program, the Pre-Professional Skills Test, is usually administered during the student's sophomore year in college. The second part, a content-specific test is administered prior to graduation - or, in some cases, prior to certification.

WISCONSIN

ENTERING STUDENT INITIATIVES

++ A regional testing program places students in English and math courses. Although it is a statewide program, institutional participation is optional. All students applying for admission to an institution participating in the program are required to take the test.

-- A foreign-language examination, similar to the English and math program, is under consideration.

INITIATIVES FOCUSING ON THE ASSESSMENT OF THE QUALITY OF UNDERGRADUATE EDUCATION

++ The Board of Regents recently completed a study on the system's future that requires it to look into assessing college outcomes and to initiate a comprehensive assessment program for the universities in the system.

++ Five pilot assessment projects have been developed by five institutions.

++ The Board of Regents recognizes the importance of maintaining institutional diversity; therefore, the Board believes it would not be useful to develop a uniform approach to assessment that all institutions must follow.

WYOMING

K-12 INITIATIVES

++ A consequence of the English Proficiency Exam, described below, has been the incorporation of more writing requirements in the high school curriculum.

NOTE: See entering student initiatives and informational initiatives.

ENTERING STUDENT INITIATIVES

++ The University of Wyoming, the only public institution in the state, has two state-funded assessment programs. The Mathematics Diagnostic Test is administered to all college bound students during their senior year in high school. Adults and out-of-state students take the exam before placement in college courses. The test is mandatory for all entering students; it is used to place students either in regular courses or in remedial programs.

++ A second program, the English Proficiency Exam, is used to assess writing ability of all entering students and to place and advise them. In addition, several faculty members have been recognized as "expert teachers or scholars" in teaching English composition.

++ Several community colleges are involved in assessing reading skills.

PERFORMANCE STANDARD INITIATIVES

++ Two colleges within the university are in the preliminary stages of developing "senior-level outcomes tests" that measure content-specific knowledge.

INFORMATIONAL INITIATIVES

++ The university shares the results of the English Proficiency Exam and the Mathematics Diagnostic Test with high schools in the state.

TEACHER SUPPLY AND DEMAND IN THE 1990'S
and
PROFESSIONAL EDUCATION OF TEACHERS

ESTHER SHERBERG

The quality of K-12 education in Arizona is a statewide concern. In meetings held by the Task Force staff, it emerged as a crucial area of consideration for the future development of the state. University faculty and staff, university recruiters and outside employers emphasized the need for an effective school system to provide well-prepared students, attract skilled employees to the state, and enhance the quality of life. The concern centers on the question of whether there will be a sufficient number of adequately qualified teachers to staff the public schools in the next decade. The issues of quantity and quality of teachers are primary in assessing the needs of the schools. These issues are both separate and highly interrelated. This paper will look at the numbers that are available to predict teacher supply and projected student enrollment and then will examine the professional education programs in the state and how these are meeting the needs.

TEACHER SUPPLY AND DEMAND IN THE 1990's

Retirement Statistics

The teacher population throughout the country is aging; this has led to widespread predictions of teacher shortages within the next decade. A statewide age breakdown for Arizona's teachers is not available. The records kept by individual school districts show that the age figures vary among the districts. Of members of the Arizona Education Association (approximately 65 percent of Arizona's K-12 teachers), 23 percent are over 50 years of age. As further examples, in the Tucson Unified School District, 27 percent of the teachers are over 50 (of these, 7 percent are over 60); but in the Mesa School District, only 12 percent of the teachers are over 50, with 1.5 percent over 60. Thus, on average, planners should consider that 20 to 25 percent of the teachers will retire within the next 15 years and about five percent within the next two to five years. Information should be collected, statewide, that shows the geographical areas where the retirements will occur and the teaching disciplines that will be affected.

Esther Sherberg has been a business manager at UA since 1975, serving in the Department of Cellular and Developmental Biology, the Arizona Research Laboratories, the University Instrument Shop, and the Office of Academic Affairs. Previously she held staff positions at Washington University (St. Louis), Stanford University, and the University of Maryland School of Medicine.

Projected Need for Teachers

The teachers who are approaching retirement age, predominantly women, entered the work force when there were few career paths available to women, and teaching was a primary choice. During the span of their careers, the sharp shift in opportunities for women has resulted in many fewer seeking to become teachers. Other perceptions of teaching, such as low salaries, poor working conditions and lack of professional prestige, have contributed to the decline, until recently, in the number of students seeking to enter the elementary and secondary teacher education programs. The result is that the number of people graduating from the Arizona universities with degrees in education is small compared to the projected needs of the state. For example, preliminary figures compiled from statistics from the three public universities and Grand Canyon University show that during the 1987-88 academic year there were 1,681 students serving as apprentice teachers, a last step before graduation and certification. This is an increase of only 55 students from 1986-87. In Fall, 1988, it is predicted that 3,141 teaching positions will be available in Arizona, an increase of 195 more available positions than in Fall, 1987. Thus, in the past year, the balance between the number of newly prepared teachers from the Arizona universities and the projected need in the public schools has dropped 1.7 percent to 53.5 percent.

The number of students serving in apprentice positions in the public schools has been used as the benchmark figure in determining teacher supply, but it can be misleading. In 1986, teachers seeking first-time certification passed the Arizona Teacher Proficiency Examination at the rate of 70.3 percent. Therefore, not all of the newly degreed teachers were able, immediately following graduation, to assume a teaching position. Figures are not yet available to show whether the first-time pass rate has improved since the adoption of the Pre-Professional Skills Test as a prerequisite for entry into the colleges of education.

The annual figures on number of apprentice teachers and projected available positions are compiled by the Career Services Division of ASU. No breakdown is provided that shows where the available teaching positions are located. It has been the practice of graduating students to remain in the areas surrounding the universities. For 1988-89, however, there are fewer opportunities in Pima County, for example, for new UA graduates. The failure of a budget override proposal has limited a major district's (Tucson Unified School District) ability to hire new teachers. Under these circumstances, unless the UA graduates who are seeking positions in Pima County are able to relocate to other areas of the state, they may find little opportunity to teach this year. If any of these people are placebound, they will be lost to the teaching pool, at least temporarily.

Since the Arizona universities have been preparing only about one-half of the teachers needed, the state has depended upon in-migrants to fill the remaining positions. This pattern is not unusual in the western states, where the number of in-migrants as a percentage of the total supply of new teachers ranges from 26 percent (Utah) to 89 percent (Alaska). If the colleges of education maintain their present enrollment patterns, the state will continue to depend heavily upon in-migrants and, if the rate of migration into Arizona slows, will be in direct competition with other sunbelt states for qualified new teachers. Teacher retirements throughout the U.S. will open positions in many areas; this may contribute to a decline in in-migrant teachers. Arizona will have to become more aggressive in recruiting teachers from other parts of the U.S., especially in selected disciplines, such as bilingual education, and for specific geographic areas of the state.

Need for Minority Teachers

If we can be assured that a steady stream of in-migrants will follow the lure of the good life that Arizona offers, is there a reason to be concerned about the imbalance between teachers from Arizona and those from out-of-state? The higher figures on first-time pass rates for certification by out-of-state applicants might indicate that the new residents are older and more experienced teachers. It might also indicate, based on demographic data, that the new teachers are predominantly White. Therefore, while dependence on in-migrants puts qualified teachers into the classroom, these people may not be familiar with the cultural backgrounds of the students and their hiring does not help to balance the ethnic makeup of the teachers with that of the students. It might be necessary to require some special training requirements for teachers new to the state during the first year or two of their employment to provide experience in the education of children who come from minority backgrounds or whose lives have been materially affected by poverty.

At present, 40 percent of children in Arizona under four years of age are ethnic minorities. The ethnic composition of the student body in the coming decade will change significantly, and the ethnic makeup of the teachers should also change to more closely match that of the projected school population. Minority students need teachers who are bilingual and who can help reduce the likelihood of their dropping out of school. Recent studies indicate that there is a correlation between the dropout rate of minority students and the degree of sensitivity in ethnicity of their teachers. All students, majority and minority, need to be familiar with authority figures from different ethnic groups. The cross-cultural experience will be seriously limited unless more minority teachers become available.

At a time when the population of minority students is growing, that of minority teachers is not. In 1982, 11.6 percent of the teachers in Arizona were minorities; in 1987-88, when approximately 20 percent of the general population were ethnic minorities, the number of minority teachers remained at 11.2 percent.[1] During this period, minorities did not move into teaching in proportion to their numbers in the population. Whereas teaching had been a career of choice for minority men and women in the past, as with White women their opportunities broadened and better-paying, more prestigious jobs became available. The minority teachers who entered teaching in the 1950's are now approaching retirement and the search for their replacements has many states scrambling to recruit new minority teachers, both as students in the education programs and through alternate paths. Twenty-seven states presently have either task forces that are studying minority recruitment or programs in place to implement such recruitment. We cannot depend upon in-migration to fill the gap in Arizona, since not enough minority teachers from other regions of the country are moving here at present. As competition for minority teachers increases across the country, it is not likely that we will attract them in significant numbers.

What means do we have, then, to prepare more minority teachers for our classrooms? In the period between 1982 and 1987, when minority representation in the teaching pool was already beginning to decline, the state imposed new criteria for entrance into professional education programs that have had a disproportionate and seriously negative effect on minority candidates. In Arizona, minority enrollments in the colleges of education began dropping just before the 1984 legislative mandate that all applicants for admission to the public colleges of education must pass a basic skills test in mathematics, reading and grammar. As the appropriate instrument, the Board of Regents chose the Pre-Professional Skills Test. Before this time, graduates of the teacher programs had to pass the Arizona Teacher Proficiency Examination as part of the certification process. The ATPE consists of a three-part basic skills section and a professional knowledge section. (All candidates for certification are still required to pass the Professional Knowledge component of the ATPE.) The figures cited earlier in this paper pertaining to first-time pass rates for certification refer to the ATPE. In 1986, the pass rate for Whites taking the ATPE basic skills section was 81.8 percent, falling to 60.7 percent for Hispanics, 39.6 percent for Blacks and 35.1 percent for American Indians, indicating perhaps a lack of experience in preparing for such examinations. The new teachers entering the classrooms in 1986, thus, were overwhelmingly White.

Effect of the PPST Examination:

The shift to use of the PPST as an entrance requirement has not changed the makeup of the student teachers; rather, it has had a major negative effect on minority applicants. Figures compiled by the Regents' staff for 1985-87 show that 59 percent of all first-time takers of the PPST passed all three sections (mathematics, reading, writing); but the pass rate for Blacks was 25.9 percent, for Hispanics 38.4 percent and for American Indians, 9.8 percent, significantly below the figures compiled for the ATPE. The pass rates improved on a second attempt at the test, but an average of only 60 percent tried again, and only 37 percent of the American Indian candidates did so. Therefore, the number of successful minority applicants to the colleges of education has dropped, and it is possible that the requirement of passing the PPST is deterring minority students from even attempting to apply for admission, particularly given that other career paths are available. Complete results are not yet available to show whether remedial outreach programs initiated by the colleges of education have made a difference in test scores.

A study of the PPST was carried out in 1985 by a group of educators convened by the Board of Regents. The purpose of the study was to determine the content validity of the three components and to establish reasonable passing scores. This panel found that a large majority of the items on each of the multiple choice tests were relevant and that applicants would have had an opportunity to acquire the knowledge or skill required. The few questions that were cited for potential bias were eliminated from the test.

Presently five other states (Nebraska, Nevada, Tennessee, Texas and West Virginia) use the PPST to test for admission to professional education programs. Wisconsin will initiate use of the test in 1989. In Arizona, the passing grades set for the three sections of the PPST reflect one error unit below minimum standard (three points); that is, Math--172, Reading--173, Writing--174. These grades are higher than those in effect in the other states. Texas grades at one point below in each section; the other states vary by one to three points in Math, one to four points in Reading and two to four points in Writing. In a validation study in Nevada, using grades of 169 in Reading and Math and 170 in Writing, the pass rate was 95 percent.

A bill introduced in the Arizona Legislature this past year provided for a four-year pilot program during which a percentage of students could be admitted to education programs if they passed one section of the PPST exam and had scores for each of the other two sections not more than three points below the passing score. This bill passed both the House and Senate Education Committees and was passed by the full House; it failed by two votes in the Senate. If the measure had passed, the grades would reflect more closely those in use in some other states; if the example of Nevada is valid, the change could significantly increase the number of minority candidates eligible for the colleges of education. Figures compiled by the Regents' staff in 1985 based on passing grades of two error units below standard (equivalent to the grades proposed in the recent legislation) estimated an overall pass rate of 79 percent.

The Legislature's failure to enact the new PPST pilot program leaves open the issue of how the colleges of education can attract more minority applicants. The universities' emphasis on undergraduate education and the implementation of proposals to set goals for recruitment, retention and graduation rates for minority students[2] will serve to increase slowly the pool of minority applicants, a first step in successful recruitment of teacher candidates. Strong remedial programs must be offered that will prepare students to pass the PPST examination, and communication must be strengthened so that students are made aware of these programs and of the entrance requirements of the education colleges, giving them sufficient time to prepare for the test.

Strong outreach programs must be established between the universities, the colleges of education and the community colleges.[3] Minority students tend to enter community colleges in greater proportions than enter the universities. These students must be given every advantage in transferring from the community colleges to the universities. This includes agreement between the institutions about the general education courses needed for university entrance, assurance that all students know they have the option to transfer to a university, and counseling to direct students to teacher preparation programs. Minority students must have access to strong programs that will prepare them to pass the university admissions tests and to be successful in their course work. The universities must accept responsibility for admission and retention of transfer students just as for native students; and strong financial aid and work programs must be in place.

Wisconsin has at present a pilot program in which community college students are guaranteed admission to teacher education programs in selected institutions if they complete a specific general studies program.

A recent study from the National Governors' Association ("Recruiting Minority Classroom Teachers: A National Challenge") states that "...schools, colleges and departments of education might opt to devote greater resources toward preparing teacher candidates for exit, rather than screening out potential talent at entry. Multiple measures of achievement also might be used as screens for program entry....This could relegate standardized tests to a less central role in determining who has the opportunity to train to become teachers." Arizona's colleges of education are already devising multiple criteria for entrance that reduce dependence on the PPST scores. These include such areas as specialized experience and bilingual facility as well as grade point average and test scores. The strong remediation effort needed to prepare students for exit and certification must follow in order to prepare more minority candidates for teaching.

The Board of Regents might also convene a committee to consider revalidation of the PPST, given the range of scores in use in other states. Opinions on this option vary, however, among the deans of the colleges of education. In one case, such a move was applauded as a critical step, and in another there was little optimism that revalidation would serve a useful purpose, given the nature of the examination. The recruitment of minority teachers will remain a major issue for institutions and could become one of statewide concern. In anticipation of changes that will occur beginning in 1993 when the National Board for Professional Teaching Standards starts certifying teachers, the National Governors' Association has recommended that governors study their own state's teacher licensure regulations and teacher education programs, and examine whether minority students are entering the teaching profession.

Other Specific Needs

The Need for Teachers in Rural Arizona.

In reviewing the demand for teachers, two further critical issues concern the needs of rural Arizona and the shortages in specific academic disciplines, particularly bilingual and special education and mathematics and physical science. As noted earlier, education college graduates tend to remain and teach in the areas surrounding the universities. However, all of the Arizona's counties except two, Mohave and Yavapai, have higher percentages of children under five than Pima and Maricopa. Thus we find an adequate supply of teachers, in most disciplines, clustered in the metropolitan areas, while the percentages of the future school-aged population is greater outside. Creative ways must be found to recruit people from the outlying areas who will return to their homes to teach. Financial incentives such as forgivable loans or special bonuses might entice teachers into the rural regions. Funds should be made available to provide supervisory personnel for student-teaching assignments outside Pima and Maricopa Counties. Giving students an opportunity to live and work briefly in rural Arizona might entice them to resettle there. Where this is not possible, videotapes of rural accommodations and presentations from the rural districts could give students some familiarity with areas outside the university communities.

This year the Arizona Legislature recognized the need for qualified teachers in specified geographic areas. House Bill #2108 established a Loan Forgiveness Incentive Program to encourage students to enter teacher preparation programs and to seek teaching positions in school districts in Arizona that have high proportions of economically disadvantaged and at-risk pupils. Two years of such full-time service to the state will negate a loan of $5,000. This is a laudable first step. The bill's rigorous reporting requirement will make it possible to assess the program's effectiveness. The Board must submit a report once each year that focuses on the effectiveness of the program in encouraging students to enter the teaching profession and to teach in a targeted school district. The loan program remains in effect through the 1993-94 academic year.

The establishment of the Arizona Telecommunications Cooperative[4] can provide positive educational benefits to the remote areas of the state that can help ease the effects of an insufficient number of teachers. Foreign languages, laboratory sciences and other basic courses can be offered through television and other electronic means to increase the subjects available without increasing the need for skilled staff.

The Need for Teachers in Specific Disciplines.

The shortage of teachers in specific disciplines must be viewed as a serious problem. There are already too many teachers in the school who have not had adequate preparation in mathematics and physical science. The National Science Board reports (1987) that only one in three elementary science teachers has had a college chemistry course and only one in five a college physics course. Further, more than one-half of all secondary school science teachers have never had a college course in computer science and almost one-half has had no college calculus. In 1986, about 25 percent of college freshmen planned to major in business, but only about two percent in physical science. In the same year, 30 percent of new physics bachelors in the U.S. went into manufacturing industries while seven percent chose high school teaching (American Council of Education). Other areas of need are bilingual and special education and elementary education. Arizona's small number of bilingual teachers are vigorously recruited for positions in other parts of the country. Our output of special education teachers is dropping. In Fall, 1984, approximately 160 students were serving apprenticeships in Arizona in special education; in Fall, 1987, there were approximately 100.

Increased emphasis on academic advising at the colleges of education would make students aware of the major fields of greatest need to help enhance their attractiveness to prospective employers. Efforts must be made to bring more students, especially minorities, into teaching in targeted areas.

Nationwide, in 1986 only one percent of grade 10-12 science and mathematics teachers were Hispanics; only one percent of the bachelor's degrees conferred in Physics in that year were to Hispanics and 3.7 percent were to Blacks. Cooperative university-wide efforts are needed to guide talented students with interests in mathematics and science into teacher preparation.

The Telecommunications Cooperative will help here, also, in providing classwork electronically in disciplines where no teacher is available.

Alternate Routes to Certification

Currently five institutions in Arizona have approved teacher training programs: University of Arizona, Arizona State University, Northern Arizona University, Grand Canyon University and Southwestern Baptist Bible College. The last two are private institutions. None of these schools is planning to significantly increase the size of its education college; slight enrollment increases may take place at NAU and Grand Canyon. Southwestern has a small program of 20 to 25 students, most of whom leave to teach outside Arizona. Thus, the proportion of in-state trained teachers is not likely to change. Are there sources of new teachers outside the formal route of the education colleges?

Post-Baccalaureate Programs.

The public universities point to their post-baccalaureate programs as viable alternatives to a formal education program for those who have the B.S. or B.A. degree in a noneducation field. In these programs, candidates who would like to teach in the area of their degree can take courses in subjects such as teaching methods, child development and classroom management and do nine weeks of traditional practice teaching in preparation for certification. Enrollment in these programs has increased, with some indication of a slight rising trend in people who are changing careers in favor of teaching. Potential teachers who live in an area served by the universities can often pursue certification through the post-baccalaureate route while still working at their current jobs, but a drawback for other candidates would be that they would have to stop working at least during the full-time nine-week internship period. For those who would also have to move to where the courses are accessible, this could mean a long period of unemployment, a course not everyone might be able to follow. Thus, for people in the easily accessible university areas, who are able to leave their present jobs for nine weeks, post-baccalaureate study is a feasible approach to a teaching career and should be encouraged. It is a sound way to bring into teaching those people with degrees who lack courses in teaching methods and classroom experience.

The colleges might also design a post-baccalaureate program to attract degreed minority candidates into teaching. Such a program would need a strong financial aid component.

To continue to attract this vital group into the teaching programs, the universities and the education colleges must recognize a status for them in the system which provides some student privileges beyond those of beginning undergraduates.

The use of electronic means to provide courses for the post-baccalaureate candidates is both applauded and viewed with caution. The availability of coursework at times and places convenient to the applicant could enhance the program for many people. But there is some skepticism about the use of high technology to prepare people to deal directly with other people. Here the course offerings would have to be selective, dealing with basic skills and other in-service needs, with careful supervision provided for other courses.

Alternate Certification.

A new alternate credentialing program has been adopted by the State Board of Education that can provide more teachers for grades 7-12. Under this program, a candidate with a bachelor's degree can be hired by a school district to teach those courses in which he or she has either a major or 30 hours of study, a passing grade on a state-administered test in that subject, and a passing grade on the teacher proficiency exam. The candidate must also take 160 hours of instruction in subjects such as teaching methods, child development and classroom management. These courses can be taken in the summer before the teaching assignment begins or in evening classes during the school year. A provisional certificate will be issued for one year; this year will be a training period during which the new teacher will be closely supervised by an experienced teacher.

This route gives a candidate a regular position while being trained as a teacher, eliminating the potential financial drawback of the post-baccalaureate course. It is a more accessible route for those who live far outside the university areas, particularly if some of the course work is available via television and other electronic means. Details about the program must still be defined. The tests that will be used to determine subject knowledge, a system for monitoring standards in the school districts and the level of supervision and training that is available will be vital elements in the success of the program. A recent study of the alternate route of certification in effect in New Jersey since 1985 found the program to be "a notable success," but one conclusion is troubling. The report criticized the training and supervision that alternate route candidates receive prior to certification. In Arizona, the school districts and the universities should be encouraged to work closely together to establish the standards and training that will be used. The alternate certification program could be used to attract a variety of people into teaching. In Maryland, training programs have been established at two military bases for personnel nearing retirement; they are ready, then, to take their certification tests when they retire. Retired businessmen, scientists and engineers are potential candidates for K-12 teaching if a reasonable means to achieve certification is available. The success of the post-baccalaureate programs has proved that there is a growing body of people who seek career changes and look to teaching as a viable alternative.

It should be noted that in other parts of the country school districts are becoming quite aggressive in seeking new teachers. In Brookline, MA, prospective teachers with B.A. or B.S. degrees are hired by the school district and trained completely within the district, including the methods component.

Efforts might also be made in Arizona to recruit those graduates of teacher education programs who either never went into teaching or left the field, on the chance that they have some renewed interest. These are people whose training could put them back into the classroom quickly.

If the colleges of education do not enlarge their classes, alternate means to attract people into teaching must be encouraged. A predicted slowdown in in-migration and aggressive competition from other sunbelt states will decrease the numbers of new teachers from other areas. Efforts to recruit minorities into teaching must be redoubled. The latest figures from the Western Interstate Commission on Higher Education show that the growth in high school-aged students through 2004 will be greater in the West, and more students will be ethnic minorities. For Arizona the projection is for a leap from 31,876 high school graduates in 1987-88 to 50,910 in 2003-04. As today's teachers reach retirement age, replacements will be needed in the schools and, to match the makeup of the student body, a greater number of minority teachers will be needed. A plan to assure a sufficient number of adequately qualified teachers for the K-12 system must be in place with a commitment to implementation.

Data Needs

In devising such a plan, it is essential that appropriate records are available. A statewide data system should be developed and maintained that can be used to forecast teacher attrition. Such data are important because the success or failure of many education reforms will rely heavily on actual or potential imbalance in supply of teachers. A shortage will inhibit attempts to increase the competency of teachers; more emergency credentials will be issued with less attention to the quality of the candidates. On the other hand, an oversupply of teachers will hinder movement toward the professionalism of teachers. Thus, longitudinal studies to predict trends in supply and demand are essential.

PROFESSIONAL EDUCATION OF TEACHERS IN ARIZONA

Two previous task forces have studied the quality of Arizona's educational system. One of the recommendations of the 1983 report of the Governor's Committee on Quality Education (Education in Arizona: Popular Concerns, Unpopular Choices) was that a task force be appointed to re-examine the manner in which teachers are trained. That group, the Governor's Task Force on Teacher Education, prepared a report in 1984 entitled, Teacher Education in Arizona: Evolution or Revolution. Both groups were headed by Dr. John P. Schaefer.

Four years later, unfulfilled recommendations made by the Task Force on Teacher Education are still pertinent, as are recommendations made by the various national reform commissions. The concern for the quality of the teachers is just as strong today and questions about the appropriate means to provide professional education have not been answered.

Statistics have been widely dispersed to show that the best qualified students are not going into education programs in the same proportion as seek other fields. With the opening of many other career paths to women and minorities, the education colleges have been attracting students with lower SAT scores and, with greater frequency, those from vocational and general high school tracks rather than academic. This trend is reversing, however, and there is renewed interest in teaching among top-flight students. The pass rates cited earlier for the 1986 ATPE examination have raised questions about the quality of the graduates of the Arizona colleges. The percentages of students who passed, by institution, were:

ASU	78.6
UA	80.1
NAU	68.9
Grand Canyon	74.8
Southwestern Baptist	100.0
Other Arizona	78.4

If Arizona were under the same mandate as Florida, where the Department of Education is required to review teacher education programs, over a three-year period, at colleges and universities in which fewer than 80 percent of the institution's graduates pass the state's teacher certification examination, all of the institutions except Southwestern Baptist and (very marginally) UA might have come under study.

To encourage the best students to become teachers, the enhancement of K-12 teaching as a career must become a serious target. Recommendations of various national commissions include toughening certification standards, increasing salaries and improving working conditions. Others are to develop "lead teachers," eliminate undergraduate programs in teacher education, develop new graduate school programs leading to master's degrees in teaching, create a National Board for Professional Teaching Standards, restructure K-12 schools to allow teachers greater discretion in achieving state and local goals, increase teacher accountability for student performance and increase efforts to recruit minority teachers. Many of these recommendations were included also in the report of the Arizona Task Force on Teacher Education.

The average teacher's salary today in the U.S. is $28,031. Arizona ranks twenty-fourth among the states with an average salary of $27,388. Inequality within districts points up the differences between advantaged and disadvantaged areas. For example, in Pima County averages range from $23,034 in Vail to $31,822 in Tucson Unified School District. The average starting salary in Pima County is now almost $20,000, and this may make teaching a more attractive career choice, but salary ranges for experienced teachers will have to rise to keep people in the classroom past their first few years. It has been suggested that this issue will require a special session of the legislature to deal exclusively with budgeting of schools.

The Five-Year Education Program

The question of the four- versus five-year education program is being debated nationally, but none of the Arizona institutions plans to move to the five-year program. This entails a four-year liberal arts curriculum and a fifth year of study in the theory and practice of teaching and practical study leading to certification. Such a program is seen locally as a deterrent to attracting better-qualified candidates in that it delays for a year entrance into a paying position with little promise of adequate financial return. Its negative impact might be heaviest on minorities. All of the institutions feel that they are able to provide, within a four-year track, adequate academic preparation and classroom teaching experience. Their efforts are being directed toward strengthening the four-year experience.

The make-up of the five-year plan is appealing in that it provides adequate time both for an intensive academic program and for study in the theory and practice of teaching. Recognizing that students may not be willing or able to spend an extra year in training, a plan should be developed whereby students complete the fifth year of the program as apprentice teachers while employed in a regular position in the school district. During this year the apprentice teacher would have a provisional certificate and would work under the lead of a master teacher, so designated by the local school. Regular assessment measurements must be in place to determine whether the novice teacher is progressing adequately in mastering the skills of teaching. If the apprentice has performed according to the standards, at the end of the year he/she would be awarded full certification. In this way, the new teacher is training and working, gaining on-the-job experience from an experienced, superior teacher. This apprentice year should be designed jointly by the education college and the local school district, and the student should receive additional training at the university in areas in which he/she may be weak. There is not sufficient experience with or data collected about the five-year program for it to have garnered much support in Arizona. The question remains whether after five years of training a teacher is better prepared to enter the classroom.

Several states mandate that the universities be responsible for additional training for any student who does not meet the standard requirements at the end of the first year. Grand Canyon University guarantees assistance to any teacher graduate, at no expense to the school district or to the graduate, who is experiencing difficulty in the first year of teaching.

This five-year program would be valuable in orienting teachers into the classrooms. Although education students work in the school districts observing and doing practice teaching for various periods during their training and the colleges of education have in place assessment programs to determine skill acquisition, most teachers must assume full responsibility for a classroom on their first teaching job. Other than through retirement, the greatest attrition of teachers is in the first year of teaching. Induction programs are needed to help teachers successfully survive that period. There must be financial incentives to those designated as master teachers and this must be viewed as a vital and respected role for an experienced teacher.

The issuance of a provisionary certificate to the new teacher could become the basis for introduction of a tiered system of certification, withholding full certification until a teacher has successfully passed designated performance standards, and adding a category for those attaining master teacher status. Provisional certificates would be effective for up to two years, and could be renewed if it was determined that the teacher was moving adequately toward full certification. The standards for each step in certification should include additional teaching experience and continuing education in areas that enhance the teacher's knowledge of subject matter and classroom skills; attainment of a master's degree would be a further step. The education colleges should be responsible for offering rigorous, challenging graduate courses.

For teaching to be perceived publicly as a profession, this distinction between beginning and experienced teachers is important. Appropriate salary rewards should follow each step. As noted earlier, the beginning salaries of teachers are rising and becoming more competitive, but the gap is closed in mid-career, reducing incentives to continue to grow professionally.

Full certification and certification as a Master Teacher, under this tiered plan, would be renewable every five years, and for renewal it would be necessary to demonstrate experiential and educational advances.

Long-term studies must be initiated to measure the results of different routes to teaching before a new approach to certification can gain acceptance. Measurements must be developed to determine whether teachers with four years of liberal arts training and one year of carefully supervised apprentice teaching have different results with student attainment than those teachers who complete conventional four-year programs.

As noted earlier, the National Board for Professional Teaching Standards will start certifying teachers in 1993. Such a board was a recommendation of the Carnegie Forum's report entitled, A Nation Prepared: Teachers for the 21st Century, and Carnegie has funded its establishment. (Carnegie spearheaded the movement to strengthen medicine nearly 100 years ago through national medical board certification and examinations.) Certification by the National Board will be voluntary for teachers. The recommendations issued by the National Governors' Association urge the states to begin now the debate over what type of rigorous teaching standards would gain national recognition and enhance the profession. Arizona's review of its state-level standards should include ways to link teacher certification with teacher assessment.

Pilot Programs

Before new programs can be recommended for implementation, pilot programs should be developed to carefully study and test areas such as beginning teacher induction, teaching internships as fifth-year programs, and a multi-tiered certification system. We recommend that such programs be initiated by the ASU-West Faculty of Education and Human Services. The colleges of education at UA and ASU are grappling, at present, with managing their enrollments at appropriate levels, experimenting with new multiple-criteria entrance requirements, and implementing curricular changes. The faculty must maintain their classroom and clinical lab activities while fulfilling the urgent need for research on teaching and teacher preparation; they must be at the forefront of the expanding knowledge base for teaching expected of colleges of education. Some of these pilot programs could appropriately be initiated at NAU since their outreach is statewide, although their main campus location outside a major metropolitan center might make the results less applicable in other regions. We find the most appropriate vehicle for such experimental pilot programs in preparation and delivery of teacher services, given its site, still-small size and cooperative programs with five community colleges, to be the ASU-West facility.

Additional Classroom Training

While studies are underway to assess the training time spent in the classroom, the universities need to look at ways to increase early classroom exposure for their students. At NAU, resident students can begin as early as their freshman year to visit classrooms in Flagstaff. They keep logs of what is happening and observe what a teacher does. The other schools need to devise some way for a student who plans to declare as an education major or who needs to learn more about the field to be part of a classroom setting. From this, students could build on their experiences; their formal observation and practice teaching assignments as education majors would be more meaningful and more valuable. This would aid also in determining those students who may not be suited for teaching who should be encouraged early to prepare for another career.

Need for Working Partnerships

An important issue of concern in the professional education of teachers involves strong partnerships between the universities, the K-12 system, the community colleges and the business community. Unless these entities are working collaboratively, the results will not be fully beneficial. Arizona's widespread community college system provides from 50 to 70 percent of the students in the education programs at the universities. Strong articulation efforts must be maintained to assure that the community college students are being adequately prepared for the universities' programs. Much of the responsibility for preparing students sufficiently to pass the PPST examinations rests with the community colleges.

A step in articulation with the community colleges should involve their working with the K-12 system to provide classroom experience for their students who intend to transfer to an education program. Even though this would come before any formal education courses have been taken, the student would observe what teaching is and could gain a better perspective of what he/she will face.

Another area in which the community colleges could work collaboratively with the schools is that of supervising practice teachers. (This was a recommendation also of the Governor's Task Force on Teacher Education.) Again, the outreach of ASU-West with five community colleges makes this another suitable study to be developed and carried out there. Studies show that the university professor with whom a student has worked is less involved with the student in the practice teaching experience. This leads the student in the direction of the classroom teacher and that student then learns how to to teach according to standards already in place rather than according to new knowledge being developed. The practice teaching period is vital and careful programs and supervision must be developed cooperatively between the universities, the community colleges and the school districts to ensure that the most up-to-date research on teaching finds its way into the K-12 classrooms.

This issue was discussed in the 1984 report issued by the Governor's Task Force on Teacher Education:

"A further task the colleges of education must deal with more effectively is converting valid and useful research findings on teaching and learning into new classroom techniques. There are few effective mechanisms at the present time for sharing new approaches with practicing classroom teachers, and student teachers often have little opportunity to apply new theory in their practice teaching. The consequences of this failing is that the money spent to fund research is ultimately wasted, and outmoded and inadequate approaches to teaching are needlessly continued."

Strong partnerships must be forged with the K-12 system and the community colleges involving teacher exchange, dissemination of information about the requirements and needs of the universities so that teachers and students are fully aware of the preparation necessary, and outreach toward identifying and developing those students who show an interest in pursuing a career in education. The program in the Department of Mathematics at UA that brings area high school teachers to the university for a year of teaching and study is an excellent example of outreach and cooperation, beneficial in the short-term to the individuals involved and in the long-term to their students, their districts and ultimately to the university. Such programs should be coordinated cooperatively with the colleges of education.

At NAU, teachers from the Flagstaff schools spend time on campus, working with student teachers. The Teacher of the Year joins the NAU faculty for a period of time. During the summer sessions, experts in education are brought to the campus to work with returning teachers.

Another partnership that has been proposed revolves around the need to introduce a multicultural aspect into the schools. The universities and the school districts should work together to devise ways to accomplish this. The need exists both in training teachers at the start and in re-training experienced teachers. For students the need is for an integration of information about different cultures into all courses on teacher training, not only in a specific course on multicultural issues. Thus, these issues would not be contained only in a course for bilingual teachers, but in courses that all students take, such as methodology and theory. The students need help in learning how to bring about minority parent involvement and how to make it work.

Such programs are needed, too, for experienced teachers, to give them more knowledge about different cultures. They could be made part of the continuing education requirements for teachers, or the universities could develop re-training programs to present in the school districts.

The business community of Arizona can also play an important role in helping the schools identify and assist talented prospective teachers. It is not uncommon for businesses, especially those seeking a wider pool of minority engineers, to select promising high school students to foster. These students are encouraged through provision of summer jobs, internships and cooperative work programs to stay in school and prepare for graduation and entrance to the universities. In return, the trained specialist will work for the sponsor following university graduation. Industry has indicated a need for a strong, well-respected school system to attract new employees and should be willing to participate in similar programs to foster and support promising students who will become teachers. Although they will not gain new employees through such programs, they will have added to the enhancements they can offer their prospective employees.

Other means must be used also to reach students, both majority and minority, in junior and senior high school, to encourage them to become teachers. These students will need careful supervision and help to ensure their completing high school with the skills necessary to gain entrance to the university and a continued drive to become teachers. Ways to involve them in teaching situations, either in their own high schools or in cooperation with other schools, will be necessary. This collaboration between the colleges of education and the high schools is vital.

Improving the teacher education programs in the universities is not the role of the colleges of education alone. The task is so tied to the programs of the arts and sciences and other colleges across the universities that an expanded level of commitment and cooperation must be built and maintained. The premise that teachers must be liberally educated goes far beyond the arts and sciences' faculty working with the education faculty to develop programs for education majors. The influence of their teaching is strongly felt. Every classroom experience a prospective teacher has must enforce the model of good teaching; every lecture must instill in the student the standards of good teaching. Arts and sciences' faculty must be willing to work with education faculty to determine the nature of the knowledge base required for teaching in various areas, and must ensure that quality courses are available for developing that knowledge base. It is not appropriate for a mathematics professor to judge that the incoming students are poorly prepared in math because they were not adequately taught in K-12 by teachers who were not properly prepared in the colleges of education; the K-12 teachers received their training in mathematics not in the education colleges, but in the math departments. The responsibility for preparing professional teachers is shared throughout the university.

The universities and the state must be strongly committed to the need for sufficient well-qualified teachers for Arizona's public school system. A nine-year summary (FY81-FY89)[5] of the program change requests ("decision packages") approved by the universities and forwarded to the Board reveals that the lowest dollar emphasis has been on education (as a college) and public service. Four decision packages were sent forth during this period, from UA in FY83 and FY88, from NAU in FY86 and from ASU in FY89. Of these, only the NAU request was funded, reduced from $500,000 to $400,000.

Strong cooperation among the universities, colleges of education, community colleges and K-12 schools can lead to a greater supply of successful teacher candidates and a renewed confidence in the quality of Arizona's teachers. As our student population grows, the quantity and quality of K-12 teachers will remain an issue of greatest importance to the welfare of the state.

CONCLUSIONS

Arizona will have a continuing demand for teachers throughout the next decade if the current teacher-student ratio is maintained.

Arizona's institutions of teacher preparation will continue to produce less than 50 percent of the state's new teachers.

The composition of the student body will change significantly.

The composition of the teachers in the labor pool will not match the ethnicity of the projected school population.

Experimentation and research on teaching and teacher preparation are needed.

Substantive measures of teaching skill are needed for the development of reliable teacher assessment.

RECOMMENDATIONS

- Develop and maintain a statewide data system that can be used to forecast teacher supply and demand figures and can be the basis for long-term study on teacher attrition. This system should include race and ethnicity of the current and projected teaching force.

- Develop a program to recruit minorities into the teaching profession. The program should address: financial incentives (including forgivable loans); social and academic support; the effect of the basic skills testing requirement on minority enrollment.

- Develop pilot programs in the following areas:

  Beginning teacher induction;

  A multi-tiered certification system;

  K-12/community college/university partnerships;

  Teaching internships as fifth-year programs;

  University/College of Education partnerships;

  Delivery of education in remote areas;

  Using community college personnel to supervise practice teachers.

- Encourage research, data collection and dissemination, and program evaluation relative to teacher education.

- Develop standards that make the colleges of education accountable for the performances of their graduates.

- Recognize the programs and faculty of the Colleges of Education as important contributors to the university as a whole.

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ENDNOTES

1. The breakdown of teachers is: 89 percent White, 2 percent Black, 7 percent Hispanic, 1 percent American Indian, .5 percent Asian.

2. See especially Working Papers entitled, "Minority Education in Arizona's Universities," (J. Wood) and "Undergraduate Literacy Programs at Arizona's Universities," (K. Church).

3. See Working Paper entitled "Community College-University Articulation in Arizona," (R. MacVicar) and The Chronicle of Higher Education, July 27, 1988, p.A28.

4. See Working Paper entitled, "Opportunities for Telecommunication for University Outreach in Arizona," (R. MacVicar).

5. See Working Paper entitled, "Arizona Universities Program Changes Nine Year Summary:FY1981-FY1989," (R. Caldwell).

EXECUTIVE SUMMARIES OF REPORTS AND BOOKS ON HIGHER EDUCATION

MARY J. TALBOTT

INTRODUCTION

Many books and reports have been written about higher education during the past decade, and it is often difficult to remember the specific conclusions and recommendations of each. The purpose of these brief summaries was to provide easy access to the information contained in some of these publications. The summaries retain a substantial amount of the original language of the work. By their very nature, summaries are reductionistic and, therefore, do not contain the rich discussion, supporting evidence, or fine points contained in the original works; yet, they can be useful for managing the vast amount of information. I take full responsibility for the condensation and presentation of the information.

As you will note, the summaries do not contain an evaluation of each of the works.

List of Reports and Books Summarized for the Task Force on Excellence, Efficiency and Competitiveness.

Association of American Colleges, Integrity in the College Curriculum: A Report to the Academic Community, Findings and Recommendations on the Project on Redefining the Meaning and Purpose of Baccalaureate Degrees, Association of American Colleges, Washington, D.C., February, 1985.

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Mary J. Talbott is a doctoral candidate at the University of Arizona. Her research is centered in higher education with contributory emphasis in management. Her studies and experience range in perspective from development and implementation of staff training programs; equity, accreditation, evaluation and assessment; to curriculum and faculty data analysis.

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EXECUTIVE SUMMARY

TITLE Integrity in the College Curriculum: A Report to the Academic Community

AUTHOR Association of American Colleges

DATE 1985

IMPETUS FOR THE STUDY

The Association of American Colleges, whose fundamental mission is to address basic issues of educational policy, turned its attention to the issue of undergraduate education in the wake of several national commission reports that addressed deficiencies in the condition of undergraduate education. The organization believed that the persistence of these weaknesses would undermine public confidence in higher education and adversely impact graduate and professional education. Therefore, in January 1982, the Project on Redefining the Meaning and Purpose of Baccalaureate Degrees was established. Nineteen American educators comprised the Select Committee that oversaw and guided the work.

CHARGE

The Select Committee was directed: "to make a thorough study of the state of baccalaureate education, to promote widespread discussions among faculties and academic administrators about issues of basic educational policy concerning the primary mission of colleges and universities, and to formulate recommendations for improving programs leading to bachelors' degrees in all institutions of higher education" (Integrity, p. ii)

METHOD

The committee surveyed the literature on undergraduate education, concluding that more effort needed to be directed toward determining ways to overcome the existing problems. The faculties and administrators from 11 institutions were invited to engage in a year long discussion to identify what measures might be appropriate to assist in reforming their institutions. Six specific lines of investigation were initiated. At the close of the year of discussions and inquiry, two conferences were scheduled to examine special issues that were not settled during the year's work. Additionally, a special task force on assessment and evaluation of student progress and academic programs contributed to the deliberations of the Select Committee.

SPECIFIC FINDINGS

The value of an undergraduate degree has declined.

a. The specific evidence cited in recent commission reports substantiates the conclusion that a profound crisis exists in education.

b. "The business community complains of difficulty in recruiting literate college graduates" (Integrity, p. 1).

c. Remedial English programs abound in colleges and the corporate world.

d. College grades have gone up, although SAT and ACT scores have gone down.

e. "Scientific and technological developments have outpaced the understanding of science provided by most college programs..." (op. cit., p.2).

f. We have more confidence in the length of a college education than the purpose or content.

g. "There is a public sense that standards are too low, that results are not what they used to be" (op. cit., p. 3).

RECOMMENDATIONS

FACULTY

1. "Presidents and deans must confront the obstacles to faculty responsibility that are embedded in academic practice..." (op. cit., p. 9). Together, they must revive "the responsibility of the faculty as a whole for the curriculum as a whole" (ibid.).

2. An effective curriculum committee should concern itself with the quality of college and university teaching, the curricular structure as a whole, deal with critical issues and neglected concerns, and address the current reward system that implies the only legitimate activity for a faculty member is research.

3. To reinvigorate the curriculum, sabbatical leaves should be awarded, along with funds, for professional development that would result in improved teaching.

4. A faculty task force on curriculum development and experimentation might be asked to explore learning theory and research.

5. Departments could allocate one or two regular faculty positions to research on learning in their

discipline.

6. "Professors must be encouraged to escape the confines of departments without penalty" (op. cit., p. 13).

7. Resources beyond the campus must be utilized to enrich the baccalaureate experience.

8. Trustees must ask searching questions about the quality of academic programs and ensure the faculty fulfill their responsibilities.

THE CURRICULUM

1. The curriculum needs a structure. "We propose a minimum required program of study for all students, consisting of the intellectual, aesthetic and philosophic experiences that should enter into the lives of men and women engaged in baccalaureate education" (op. cit., .15). Nine experiences are essential to that kind of education (op. cit., pp. 15-23):

a. Inquiry, abstract logical thinking, critical analysis.

b. Literacy: writing, reading, speaking, listening.

c. Understanding numerical data.

d. Historical consciousness.

e. Science.

f. Values.

g. Art.

h. International and multicultural experiences.

i. Study in depth.

STUDY IN DEPTH

1. Study in depth should exhibit certain features: it will have a central core of method and theory; it will force students to experience the range of topics addressed in the discipline and the tools that it uses; it will have a sequence that presumes advancing sophistication; it will promote an understanding of the discipline's characteristic questions and arguments; it will acquaint students with the history and philosophical presuppositions; it will acquaint students with the questions it cannot answer and the "dead ends" in the field; and it will provide a means for the student to demonstrate mastery.

2. As students advance, they should work with the primary materials of their concentration.

3. "Study in depth, whether professional in focus or not, should not be overprescribed...Nor should students be permitted to concentrate beyond necessity...it cannot be allowed to dominate the student's entire program" (op. cit., p. 31).

4. Institutions should strive to maintain a student's option for change as long as possible.

5. Colleges and universities should invent ways in which students can demonstrate mastery of their field of study without resorting to comprehensive examinations, because at their worst, these exams are disruptive to the educational experience.

ACCOUNTABILITY

1. Colleges and universities should develop ways of demonstrating to state legislators, students and the public that they, the institutions, know what they are doing (or not doing) and what they are doing well (or poorly).

2. Three areas of institutions should be assessed--students, faculty and programs. The professors are fundamentally responsible for these three interrelated areas; therefore, they should be charged with designing and monitoring the mechanisms of assessment.

THE PROFESSION OF COLLEGE TEACHING

1. "The PhD candidate should be introduced in a systematic way to the profession of teaching. The qualifying process should include acquaintance with the literature on human learning and evaluation as well as apprentice teaching, subject to peer observation and the criticism of veteran teachers. The candidate should demonstrate competence in designing a syllabus and examinations, and selecting textbooks, readings and laboratory manuals" (op. cit., p. 36). The candidates must also learn how to grade papers and how to help students speak and write clearly.

2. The awarding of the PhD degree should include an evaluation of the individual's teaching skills.

3. Colleges and universities should establish programs to help new recruits systematically improve their teaching styles.

4. The reward system must be designed to measure teaching performance as well as research performance, and good teaching must contribute to the achievement of promotion, tenure and salary advancements.

EXECUTIVE SUMMARY

TITLE	The Closing of the American Mind: Education & the Crisis of Reason
AUTHOR	Allan Bloom
DATE	1987

IMPETUS FOR THE STUDY

"This essay--a meditation on the state of our souls, particularly those of the young, and their education--is written from the perspective of a teacher" (Closing, p. 19).

METHOD

Not specifically stated. The author states that this book is the result of his work as a university professor and his thoughts about the changes he has observed during his career.

CONCLUSIONS

The book is divided into three sections--Students; Nihilism, American Style; and The University.

The first part of the book, Students, discusses the student as a product of the culture in which he/she lives. Initially Bloom asserts that at one time he believed students arrived at university with "clean slates unaware of their deeper selves and the world beyond their superficial experience" (op. cit., 47).

But, during the subsequent chapters the reader is shown how various aspects of culture influence the young. Some of the conclusions advanced by the author are as follows:

- With few exceptions, students view the truth as relative.
- Students today do not read good books, and, therefore, they fall prey to "our most fatal tendency--the belief that the here and now is all there is" (op. cit., 64).
- Rock music, unlike classical music, provides "premature ecstasy" without any of the effort or virtue required for great endeavors. This intense early experience leaves students sapped of energy, dry and routine.
- Relationships are characterized by a self-centeredness, students feel a sense of impotence, they are not involved in political life, and individualism "is epidemic" (op. cit. 87).
- The family has no spiritual or intellectual life.
- Relations between Black and White students are poor.
- The young have been liberated from the traditional attachments--religion, country and family--and, therefore, must choose to form attachments.
- Divorce is America's most urgent social problem and one that receives little attention. "The important lesson the family taught was the existence of the only unbreakable bond, for better of worse, between human beings" (op. cit., p. 119).
- "All the students are egalitarian meritocrats, who believe each individual should be allowed to develop his special--and unequal--talents without reference to race, sex, religion, family, wealth or national origin. This is the only form of justice they know, and they cannot even imagine that there could be any substantial argument in favor of aristocracy or monarchy" (op. cit., p. 90).
- Feminism has undermined the family structure by removing the incentive for males to support their families and by advancing ideas that are not in harmony with the basic nature of females and males.
- Young people are unable to make sexual commitments, in part, because of the current beliefs about sexism. This ideology, the author asserts, "only works for people who have had no experience of the feelings, have never loved, have abstracted from the texture of life" (op. cit., p. 123).

NIHILISM, AMERICAN STYLE

- "The most important and astonishing phenomenon of our time, all the more astonishing in being almost unnoticed: there is now an entirely new language of good and evil, originating in an attempt to get 'beyond good and evil' and preventing us from talking with any conviction about good and evil" (op. cit., p. 141).
- Intellectuals from the Continent view Americans as superficial and labeled, more than two hundred years ago, the "new man of the new democratic regime" as bourgeois.

That is, one who is "egotistical, materialistic being without grandeur or beauty of the soul...Continental thinkers have been obsessed with bourgeois man as representing the worst and most contemptible failure of modernity, which must be at all costs overcome" (op. cit., 157). And, freedom and equality underpin political regimes that constitute modernity.

- "We are suffering from a three-hundred-year-long identity crisis...To sum it up, the self is the modern substitute for the soul" (op. cit., 173).

- Man is no longer defined by his reason but his art. Through his art, man can be creative.

- Values have taken the place of good and evil. "Authentic values are those by which a life can be lived, which can form a people that produces great deeds and thoughts...A value is only a value if its life-preserving and life-enhancing...Egalitarianism means conformism, because it gives power to the sterile who can only make use of old values, other men's ready values, which are not alive and to which their promoters are not committed" (op. cit., p. 201).

- There are great questions that must be faced if one is to live a serious life, questions that focus on reason-revelation, freedom-necessity, democracy-aristocracy, good-evil, body-soul, self-other, city-man, eternity-time and being-nothing. "A serious life means being fully aware of the alternatives, thinking about them with all the intensity one brings to bear on life-and-death questions, in full recognition that every choice is a great risk with necessary consequences that are hard to bear" (op. cit., p. 227). Choice today, however, means that there are no necessary consequences and that "disapproval is only prejudice and guilt a neurosis" (op. cit., p. 228).

THE UNIVERSITY

CONCLUSIONS AND RECOMMENDATIONS

- "The university is the place where inquiry and philosophic openness come into their own. It is intended to encourage the noninstrumental use of reason for its own sake, to provide the atmosphere where the moral and physical superiority of the dominant will not intimidate philosophic doubt. And it preserves the treasury of great deeds, great men and great thoughts required to nourish that doubt" (op. cit., 249).

- The university must provide alternative thoughts to avoid the most subtle form of tyranny, one that is based on the lack of awareness of other possibilities.

- "The university's task is thus well defined, if not easy to carry out or even keep in mind. It is, in the first place, always to maintain the permanent questions front and center. This it does by primarily by preserving--by keeping alive--the works of those who best addressed these questions" (op. cit., 252). "There is one simple rule for the university's activity: it need not concern itself with providing its students with experiences that are available in democratic society. They will have them in any event.

They must provide them with the experiences they cannot have there" (op. cit., p. 256).

- "Our present educational problems cannot seriously be attributed to bad administrators, weakness of will, lack of discipline, lack of money, insufficient attention to the three R's, or any other common explanations that indicate things will be set aright if we professors would just pull up our socks. All these things are the result of a deeper lack in the university's vocation...Thought is all in all for universities. Today there is precious little thought about universities, and what there is does not unequivocally support the university's traditional role" (op. cit., p. 312).
- The student revolts of the sixties destroyed the American liberal traditions of learning. Ironically, it was that tradition which generated the movement toward racial equality during that era.
- Students receive little guidance from the university about what they should study, and this reflects the fact that no university-wide agreement exists about what should be studied.
- "...the only serious solution (to liberal education) is the one that is almost universally rejected: the good old Great Books approach, in which a liberal education means reading certain generally recognized classic texts, just reading them, letting them dictate what the questions are and the method of approaching them--not forcing them into categories we make up, not treating them as historical products, but trying to read them as their authors wished them to be read" (op. cit., p. 344)

EXECUTIVE SUMMARY

TITLE College: The Undergraduate Experience in America

AUTHOR Ernest L. Boyer

DATE 1987

IMPETUS FOR THE STUDY

This work is a companion piece to the earlier work High School, which was completed by Boyer in 1983 with the support of the Carnegie Foundation for the Advancement Teaching. Acknowledging that the confusion in the nation's schools is, in part, a reflection of the confusion at the collegiate level, Boyer, again with the support of the Carnegie Foundation for the Advancement of Teaching, decided to study the way in which structures and procedures of colleges affect the lives of their students.

METHOD

This study relied on information generated from a number of activities:

- Sixteen observer reporters spent two weeks in the Fall of 1984 at twenty-nine colleges and universities. The institutions were carefully selected so that the full spectrum of institutional types would be represented. During the visits, college officials and faculty were interviewed; classrooms, student unions, residence halls and laboratories were visited; and time was spent with students during both day and evening hours.

- A random sample of 5000 faculty and 4500 undergraduates, drawn to represent the various institutional types, was surveyed. Not only was demographic information obtained, but the respondents provided information about how they felt about teaching and learning experiences, and about the goals of higher education. This survey was similar to two earlier surveys, and therefore it provided comparative information.

- To study the transition from high school to college, the Human Ecology Research Services conducted a special survey of twelfth-grade students and their parents. Additionally, 232 randomly selected high school counselors and admissions officers at the twenty-nine site visit institutions were interviewed by telephone.

- The extensive literature on higher education was reviewed.

- Opinion Research Corporation surveyed 1,310 chief academic officers on the status of general education at their institutions.

- Several special studies were commissioned to supplement existing information.

FINDINGS

The focus of the report is on eight points of tension that appeared regularly at most of the institutions visited and seemed consistently to "sap the vitality of the baccalaureate experience" (College, p. 2). Below are listed the eight major findings.

1. There is discontinuity between schools and higher education. The levels of education are isolated from each other. "The curriculum is disjointed and guidance is inadequate. Students find the transition from school to college haphazard and confusing" (ibid). The recruitment and admissions procedures are unclear. Part-time and older students also find the transition difficult. Further, the academic preparation of the students does not meet the expectations of the faculty.

2. "Many undergraduate colleges have lost their sense of purpose" (op. cit., p. 3). There is confusion over the goals, missions and how to impart shared values. "Closely related is the conflict between careerism and the liberal arts" (ibid).

3. "...the third problem we encountered is divided loyalties and competing career concerns within the faculty. Professors are, quite appropriately, expected to function as scholars, conduct research and communicate results to colleagues. Promotion and tenure hang on research and publication. But undergraduate education also calls for a commitment to students and effective teaching" (op. cit., p. 4).

4. There are tensions between conformity and creativity in the classroom. While faculty complain about the passivity of students, vigorous intellectual exchange was often absent. "Still, there remains a vision of the undergraduate college as a place where teachers care about their students, where, in the classroom, traditions can be challenged and new ideas tested" (op. cit., p. 5).

5. Although colleges often speak of the word "community," a great separation was found between the academic and social life on the campus. Administrators and faculty do not have a clear role in student life. Further, residential and commuter students were found to live in two separate worlds.

6. "The sixth problem is the disagreement we found over how the college should be governed" (ibid.). Presidents are subject to conflicting pressures; "faculty often feel more loyalty to their discipline than to the institutions where they teach" (ibid.); and student participation in governance is often sporadic.

7. Few institutions have developed methods of assessing the overall quality of education. Consequently, many state and national officials, parents and students are "wondering just how much is being learned" (op. cit., p. 6).

8. "We found a disturbing gap between the college and the larger world. There is, we sensed, a parochialism that seems to penetrate many higher learning institutions, an intellectual and social isolation that reduces the effectiveness of the college and limits the vision of the students" (ibid.).

RECOMMENDATIONS

RECOMMENDATIONS FOR SMOOTHING THE TRANSITION FROM HIGH SCHOOL TO COLLEGE

o Public schools should increase their efforts to assist students in the transition to college.

o High schools and national testing agencies should establish regional advisement centers to provide information to counselors about colleges in the area and nationwide.

o National testing organizations should give grants to high schools, especially those with low college-going rates, to strengthen counseling programs.

o The Committee on Self-Regulation of the American Council on Education should update and strengthen the code of conduct for college recruitment.

o Students are urged to prepare for campus visits by making a list of questions that focus on the teaching and learning and the quality of life.

o Prospective students should press for candid answers to their questions.

o Prospective students and parents should look at who teaches lower-division courses, what learning resources are available to undergraduates, who advises undergraduates, what the circulation numbers are for the library, what the dropout rate is, and the range of SAT scores of students accepted by the college.

RECOMMENDATIONS FOR ADMISSIONS AND THE ASSESSMENT OF ENTERING STUDENTS

o In addition to the basic academic preparation, colleges and universities are urged to ask prospective students to submit an essay as part of the application process. This requirement would emphasize the importance of effective writing.

- There is an urgent need to assess students as the move from high school to college. An assessment program that assesses both the academic achievement and the talents of the student needs to be developed.

- Institutions should describe the criteria used for selection and provide prospective students with a profile of the student characteristics that seem most closely linked to the culture of the institution. Additionally, institutions should describe the characteristics of the students who do not succeed at their institutions as well as those that do.

- In view of the declining minority enrollments, it is recommended that "every higher learning institution reaffirm, as an essential objective, its commitment to educational opportunity, especially for historically bypassed students" (op. cit., p. 39). To that end, colleges and universities should give priority to need-based student financial aid.

RECOMMENDATIONS REGARDING MISSION

- "As a first step we recommend a preterm (orientation) session for all new undergraduates, that may extend into the first semester" (op. cit., p. 47). Further, colleges and universities are encouraged to schedule a special orientation convocation at the beginning of the academic year to formally welcome the entering students into the community of learning.

- Institutions should offer a short-term credit course for entering students on the values and traditions of the academy. Suggested topics include: "How and why the college was founded? What are its traditions? Why do we have a general education program? What significant events have shaped the college? What goals is the college seeking to accomplish?" (op. cit., p. 49)

- Orientation should be provided for part-time students and nontraditional students.

- It is essential for colleges and universities to provide a comprehensive program of counseling and advising for students throughout their entire freshman year.

- "We suggest that within the traditions of individuality and community, educational and social purposes for the undergraduate experience can be defined. The individual preferences of each student must be served. But beyond diversity, the college has an obligation to give students a sense of passage toward a more coherent view of knowledge and a more integrated life" (op. cit., p. 68).

RECOMMENDATIONS FOR THE ACADEMIC PROGRAM

- The reading and writing skills of all students should be assessed when they enroll. Students who are not prepared in written and spoken English should be placed in intensive, remedial courses.

- Good English usage must be reinforced by every professor.

Writing assignments should be an essential element of every course.

- Oral communication skills should be a part of the freshman language course.

- The general education program must have a clear purpose. It should extend from the freshman year through the senior year, enabling students to "gain an integrated view of knowledge and a more authentic view of life" (op. cit., p. 90). To create bridges between disciplines and relate the curriculum to life, an integrated core approach is suggested (although it is recognized that this is only one possible approach). Seven areas of inquiry, which cut across the disciplines, are suggested (op. cit., p. 92):

Language:	The Crucial Connection
Art:	The Esthetic Experience
Heritage:	The Living Past
Institutions:	The Social Web
Science:	The Natural World
Work:	The Value of Vocation
Identity:	The Search for Meaning

- The major and general education in the baccalaureate program should be intertwined.

- "What we propose, as the centerpiece of the undergraduate experience, is the enriched major: a major that encourages students to explore a field in depth and helps them put their field of study in perspective" (op. cit., p. 110). The enriched major will respond to three questions: "What is the history and tradition of the field to be examined? What are the social and economic implications to be understood? What are the ethical and moral issues to be confronted?" (ibid.) .

FACULTY, CLASSROOM AND RESOURCE RECOMMENDATIONS

FACULTY

- Because of the diversity in American higher education, there is, according to the author, more than one way to achieve a balance between teaching and research. Research institutions, while continuing to emphasize scholarship, research and publication as central criteria for faculty performance, also must "aggressively support good teaching" (op. cit., p. 126). "We recommend that institutions also extend special status and salary incentives to those professors who not only are productive scholars but who are, in addition, outstandingly effective in the classroom" (op. cit., p. 127).

- At other institutions--doctorate-granting to liberal arts institutions--flexibility is urged. The decisions at each institution or within the department should be tied to the mission.

- "While not all professors are likely to publish with regularity, they, nonetheless, should be first-rate scholars. We understand this to mean staying abreast of the profession, knowing the literature in one's field and skillfully communicating such information to students...Further, the results of such scholarship should be made available for judgment" (op. cit., p. 131).

- There is an urgent need for the faculty to be renewed. Colleges and universities must commit themselves to the professional growth of all faculty and provide them with opportunities to stay intellectually alive. In addition to making sabbatical leave available at every institution, it is recommended that grants be made available for teachers to pursue new ideas and for faculty research. Exchange arrangements, guest lectureships, release time for reading, studying and consultation, and travel grants to attend curriculum seminars, are several methods of promoting faculty development.

- Every institution should provide public recognition for outstanding teaching.

- A balance must be achieved between part- and full-time faculty. "Specifically, we propose no more than 20 percent of the undergraduate faculty be part time and that when part-time faculty are used, it is essential at their employment be educationally justified" (op. cit., p. 137).

CLASSROOM

- "We strongly urge...that the finest teachers should teach freshmen, and that undergraduate classes should be small enough for students to have lively intellectual interaction with teachers and fellow students" (op. cit., p. 149).

- In view of the competitive climate often observed in classrooms, it is recommended that students participate in collaborative projects. This opportunity to work together on a group assignment will highlight the point that, like competition, cooperation is essential.

- The impact of the teacher can be "powerful and enduring" when certain central qualities are present in the classroom: "command of the material to be taught, a contagious enthusiasm for the play of ideas, optimism about human potential, the involvement with one's students, and--not least--sensitivity, integrity and warmth as a human being" (op. cit., p. 154).

- It is recommended that faculty become better at assessment, to learn how to give careful concise criticisms, and to help students understand their strengths and weaknesses.

- Evaluations of teaching performance are urged.

- Currently college-teaching is self-taught; therefore, it is recommended that teacher preparation begin in graduate school. Graduate assistants should work with mentors, be helped with their teaching procedures, and learn how to give helpful written and oral comments. All professors, also should work to develop the content of their courses and their methods of instruction.

RESOURCES

- The college library is a vital part of the undergraduate experience and "every college should establish a basic books library to serve the specific needs of the undergraduate program. The core of book holdings should include those original, classic sources and contemporary writings that relate to general and specialized education in the baccalaureate program" (op. cit., p. 164). The budget should be adequate to maintain and build this basic library, and a committee should be named to monitor the quality of the library's holdings for undergraduate education.

- Every student should be introduced to and instructed in the use of the resources for learning on the campus.

- Support for the purchase of books should be increased. A minimum of 5 percent of the total operating budget should be available for library support.

- Institutions should design activities that celebrate the book. For example, authors can be invited to campus or seminars can be held in which faculty talk about books that were influential in their lives.

- All institutions, to broaden their services, should link their libraries to one or more of the computer-based learning networks.

- With respect to computers, three recommendations are proposed. "First, computer hardware should not be purchased before a comprehensive plan has been developed, one that covers personal computers, information services and the use of technology by the institution. Second, the college also should devise plans for faculty involvement, both for programming and instruction. Finally, we urge that every college have a high-level committee to plan for the integration of all learning resources on the campus" (op. cit., p. 172).

RECOMMENDATIONS FOR IMPROVING CAMPUS LIFE

- The outcomes of a college education are influenced by both the academic and nonacademic life of the student; therefore, it is necessary to view these two aspects of college life as interlocked. Several recommendations about intercollegiate athletics are included (op. cit., p. 184-186):

a. Perhaps the time has come for faculty and students at universities engaged in big-time athletics to organize a day of protest, setting aside a time to examine how the purposes of the universities are being subverted and how integrity is lost.

b. Further, we strongly urge that intercollegiate sports be organized and operated to serve the student athletes, not the institution. Success in class must be the most important objective...

c. We also propose that when serious athletic violations are discovered, the accreditation status of the institution should be revoked--along with eligibility status for the National Collegiate Athletic Association...

d. We suggest further that presidents of universities and colleges begin to say publicly what they acknowledge privately: that big-time sports are out of control. Campus leaders can meet with each other and agree to a process of cutting back expenditures for recruitment and training..

e. We urge every college to develop a comprehensive, well-supported program of intramural sports, one that serves all students, not the select few. We further urge that the intramural program be given top priority when budget decisions about athletics are made and recreational facility space is assigned.

- It is recommended that students be helped to understand that wellness is a prerequisite to everything else. Health center personnel, nutritionists, administrators, intramural athletics, food service personnel and residence hall supervisors are urged to work together to ensure the wellness program on campus has the resources and the endorsement of the whole campus.

- "A community must be built" (op. cit., p. 195). Research indicates that, despite the student-sponsored projects and athletics, two in five undergraduates say they do not feel a sense of community at their institution. "It is not an exaggeration to say that students who get involved stay enrolled" (In College, Astin).

- Institutions are urged to provide intensive training for Residence Assistants (R.A.s); mentors should supervise the work of R.A.s and meet with them regularly; campuses should provide health and psychological services to which students can be referred; and resident assistants should be reimbursed adequately for their important work.

- Institutions need to develop academic and nonacademic standards that clarify the expectations of the college or university.

- Commuter students need to be brought into college life. Activities and services should be available for nonresidential students.

RECOMMENDATIONS FOR SERVICE

- "We believe that service constitutes a vital part of an undergraduate education" (op. cit., p. 214). Therefore, it is recommended that every student complete a college service project as part of her or his undergraduate experience.

RECOMMENDATIONS FOR EXTENDING THE CAMPUS

- Because the authors recognize the value of interactions between people of different age groups and experiences, it is recommended that institutions consider learning arrangements that bring adults to campus and facilitate the exchange of ideas and experiences across the generations.

- "One of the most urgent challenges, we believe, is to extend the campus beyond the borders of our nation and make connections to the wider world community" (op. cit., p. 228).

- Students are encouraged to enrich their education by doing some of their college work in extended settings. That is, students might serve as interns, carry out projects on their own, travel and study overseas, or take a semester off to work.

RECOMMENDATIONS FOR GOVERNANCE

- Student participation in campus decision-making needs to be taken seriously by administrators, faculty and students.
- To promote unity and a clear sense of purpose, and prevent isolation, it is essential for colleges and universities to establish forums to address common educational questions and consider campus-wide matters. We urge faculty to vigorously support such a faculty senate.
- Further, it is recommended that student government receive strong support on campus and that undergraduates be more fully consulted on all aspects of campus life.
- Administrators, the faculty senate, the student government and support service personnel are urged to work together to discuss the campus-wide concerns such as those identified in this report--recruitment, orientation, advising and assessment.
- "At an effective college there is an effective leader" (op. cit., p. 248). Leadership requires vision, the ability to think inclusively, transcend the categories and bring ideas together.

RECOMMENDATIONS FOR MEASURING OUTCOMES

- College-wide assessment should focus on the overall purposes of the undergraduate experience, while the evaluation conducted in class should measure the degree to which the student has achieved understanding in separate course. To accomplish college-wide assessment, the author recommends the undergraduate college reintroduce a modern, more creative version of the senior declamation..."that students be asked to write a senior thesis that would relate the major to historical, social, or ethical concerns. We further suggest that they participate in a senior seminar with no more than twenty other students, where students would present their reports orally and critique the papers of fellow students..." (op. cit., p. 259).
- "Finally, we suggest that every college and university conduct a Senior Colloquium Series in which a handful of graduating seniors would be invited to present their final papers to the college community" (ibid.).
- Although there are a number of problems with measuring outcomes, institutions might consider assessing the extent to which an undergraduate has fulfilled the service requirement and participated in extracurricular activities.

RECOMMENDATIONS FOR GRADUATION AND BEYOND

- This report has argued that collegiate education, for all students, should be considered useful; therefore, placement activities would be given a much higher status on the campus. Placement offices should be headed by professionals and there should be adequate support to assist students in their search for employment. "A special priority should be given to liberal arts students, who are least likely to be tapped by current recruiters" (op. cit., p. 271).

- Colleges are urged to survey alumni to identify work patterns of their graduates and determine whether their college experience provided satisfactory preparation for their vocation.

- This report concludes that graduate and professional education has had a substantial influence on undergraduate study; therefore, "if the undergraduate college is to once again take command of its own destiny, we urge that graduate school deans consult with key administrators in undergraduate programs to improve the curriculum linkage between the separate levels. Above all, we recommend that graduate and professional schools reduce the requirements they impose on the undergraduate college" (op. cit., p. 275).

- Colleges and universities are urged to bring more minority students into college, to identify minority candidates for graduate and professional school, and to increase the financial aid funds for minority students at the graduate and professional levels.

- "When all is said and done, the college should encourage each student to develop the capacity to judge wisely in matters of life and conduct. Time must be taken for exploring ambiguities and reflecting on the imponderables of life...The goal is not to indoctrinate students, but to set them free in the world of ideas and provide a climate in which ethical and moral choices can be thoughtfully examined, and convictions formed" (op. cit., p. 284).

EXECUTIVE SUMMARY

TITLE	High School: A Report on Secondary Education in America
AUTHOR	Ernest L. Boyer
DATE	1983

IMPETUS FOR THE STUDY

The Board of Trustees of the Carnegie Foundation for the Advancement of Teaching concluded, in the spring of 1980, that "the time had come to examine the current condition of American secondary education; the time had come for the nation's high schools to serve their students more effectively and regain public confidence and support" (High School, p. XI). This conclusion was based upon several assumptions: first, the trustees acknowledged home influences are important, that the first years of schooling are critical, that education is a "seamless web" (ibid.) in which poor beginnings impede the chances for future academic progress; second, that the upper years of schooling are important too, that high school may be the last formal learning for many students; third, they recognized that demographic changes and attitudes have impacted American high schools.

METHOD

A national panel of teachers, principals, superintendents, university administrators, parents, school board members and citizens was selected, and, over a two-year period, they visited schools, reviewed findings and discussed proposals for reform. Additionally, the foundation's staff reviewed literature, talked to educators and visited schools. Finally, 15 public high schools were selected for field studies. A team of 25 educators visited each school for twenty school days. During the visits, the team members went to classes, talked with teachers, parents, principals and students; observed a variety of activities, attended PTA meetings and conducted interviews.

GENERAL CONCLUSION

"Ridgefield High has much in common with most high schools from coast to coast. It is neither trouble free nor terrible. Classes at times are inspired, occasionally dreadful, and, most often routine" (op. cit., pp. 15-16).

SPECIFIC FINDINGS

o "The academic report card on the nation's schools is mixed" (op. cit., p. 39).

a. Gallup Poll results indicated that between 1955 and 1980 the percent of the population who were willing to pay extra taxes to raise teachers salaries dropped from 66 percent to 30 percent.

b. At the time of this publication, about three-fourths of all students who entered high school graduated.

c. "Between 1952 and 1981 the average score on the verbal section of the SAT dropped 50 points from 476 to 426" (op. cit., p. 22). The average score on the mathematics section dropped from approximately 495 in 1952 to approximately 466 in 1981.In 1982 the average score on the mathematics section increased by 1 point to 467.

d. The combined mean score for English, math, social studies and science on the ACT dropped from 19.9 in 1970 to 18.3 in 1976 and edged up to 18.4 by 1982.

e. The National Assessment of Educational Progress (NAEP) provided a somewhat more stable picture of educational achievement during the 1970s: the reading ability of seventeen-year-olds remained approximately same between 1970 and 1980; between 1969 and 1979 there was a slight decline in the overall writing competence of seventeen-year-olds; for this same age group, the average score on the mathematics measures declined 4 percentage points between 1973 and 1978; the average scores on the science assessment increased from 45.2 in 1969 to 46.5 in 1977; and the average scores on the political knowledge section dropped from 64.4 in 1969 to 53.9 in 1976.

f. As of 1983, thirty states had established competency tests.

g. From 1973 to 1977 international surveys were conducted in seven subjects, and the results were not encouraging for the United States. In reading, the average score of United States high school students placed in the lowest one-third of the nations surveyed; in mathematics, American students scored among the lowest of all the nations tested; in civics the United States and Ireland had the lowest average score of the industrialized nations. These comparisons included all American students in the relevant age groups. If only the top 9, 7 and 5 percent of the American students are used for the comparisons, then the United States rates more favorably.

o High schools do not have a clear and vital mission.

a. Today schools are called upon to provide a wide range of services that, historically, were provided by the home, the church and the community. "The nation piled social policy upon educational policy and all of them on top of the delusion that a single institution can do it all" (op. cit., p. 57).

b. The education laws of states are often voluminous and the mandates the states have imposed are, at times, vague and wide-ranging.

c. Frequently, school leadership at the district level was found to be most concerned with administrative procedures, and educational goals appeared to be of only marginal concern.

d. In many high schools, students, teachers, parents and administrators did not share a vision of what they were trying to accomplish.

o There is not a consensus on what every student should learn.

a. As of 1980, 42 states dictated one or more courses for high school graduation; of the eight states not dictating core requirements, two designate the total number of units required for graduation.

b. The United States Department of Education studied six thousand transcripts of high school students from 1964 to 1980; they concluded there is a trend toward more nonacademic enrollments.

c. The ten courses that exhibited the most growth over the fifteen-year period of this study were physical education, music performance, driver education, cooperative education, health and physical education, distributive education, general shop, training for marriage/adulthood, and vocational home economics.

d. "State-mandated graduation requirements keep changing" (op. cit., p. 76).

e. At the high schools included in the study, the number of electives ranged from 23 to 296.

RECOMMENDATIONS

Twelve priorities have been identified; together these priorities constitute the agenda for action. Specific recommendations follow each of the twelve priorities (op. cit., pp. 310-319).

1. CLARIFYING GOALS

"A high school, to be effective, must have a clear and vital mission. Educators must have a shared vision of what, together, they are trying to accomplish...

a. Every high school should establish clearly stated goals--purposes that are widely shared by teachers, students, administrators and parents.

b. School goals should focus on the mastery of language, on a core of common learning, on preparation for work and further education, and on community and civic service."

2. THE CENTRALITY OF LANGUAGE

"The next priority is language. Formal schooling has a special obligation to help all students become skilled in the written and oral use of English...

a. Elementary school should build on the remarkable language skills a child already has acquired. In the early grades, students should learn to read and comprehend the main ideas in a written work, write standard English sentences and present their ideas orally.

b. The English proficiency of all students should be formally assessed before they go to high school. A pre-high school summer term and an intensive freshman year remediation program should be provided for students who are deficient in the use of English.

c. Clear writing leads to clear thinking; clear thinking is the basis of clear writing. Therefore, all high school students should complete a basic English course with emphasis on writing. Enrollment in such classes should be limited to twenty students, and no more than two such classes should be included in the teacher's regular load.

d. The high school curriculum should also include a study of the spoken word. Speaking and listening are something more than the mere exchange of information. Communication at its best should lead to genuine understanding."

3. THE CURRICULUM HAS A CORE

"A core of common learning is essential. The basic curriculum should be a study of those consequential ideas, experiences and traditions common to all of us by virtue of our membership in the human family at a particular moment in history...

a. The number of required courses in the core curriculum should be expanded from one-half to two-thirds of the total units required for high school graduation.

b. In addition to strengthening the traditional courses in literature, history, mathematics and science, emphasis should also be given to foreign language, the arts, civics, non-Western studies, technology, the meaning of work and importance of health."

4. TRANSITION TO WORK AND LEARNING

"The high school should help all students move with confidence from school to work and further education. Today, we track students into programs for those who 'think' and those who 'work,' when, in fact, life for all of us is a blend of both...

a. The school program should offer a single track for all students, one that includes a strong grounding in the basic tools of education and a study of the core curriculum. While the first two years would be devoted almost exclusively to the common core, a portion of this work would continue into the third or fourth year.

b. The last two years of high school should be considered a 'transition school,' a program in which about half the time is devoted to 'elective clusters.'

c. The 'elective cluster' should be carefully designed. Such a program would include advanced study in selected academic subjects, the exploration of a career option, or a combination of both.

d. In order to offer a full range of elective clusters, the high school must become a connected institution. Upper-level specialty schools (in the arts or science or health or computers, for example) may be appropriate in some districts. High schools should also establish connections with learning places beyond the schools--such as libraries, museums, art galleries, colleges and industrial laboratories."

There is also an urgent need to help students figure out what they should do after graduation.

Therefore, we recommend:

a. "Guidance services should be significantly expanded. No counselor should have a case load of more than 100 students. Moreover, school districts should provide a referral service to community agencies for those students needing frequent and sustained professional assistance.

b. A new Student Achievement and Advisement Test (SAAT) should be developed...The academic achievement portion of the test would be linked to the core curriculum, evaluating what a student has learned. The advisement section would assess personal characteristics and interests to help students make decisions more intelligently about their futures..."

The needs of the student for guidance are matched by the need of the school to be better informed about its graduates. To achieve this, the following is proposed:

a. "The U.S. Department of Education--working through the states--should expand its national survey of schools to include a sampling of graduates from all high schools at four-year intervals to learn about their post-high school placement and experience.

5. SERVICE: THE NEW CARNEGIE UNIT

Beyond the formal academic program the high school should help all students meet their social and civic obligations. During high school young people should be given opportunities to reach beyond themselves and feel more responsibly engaged...

a. All high school students should complete a service requirement--a new Carnegie unit--that would involve them in volunteer work in the community or at school. Students could fulfill this requirement evenings, weekends and during the summer.

b. Students themselves should be given the responsibility to help organize and monitor the new service program and to work with the school officials to assure that credit is appropriately assigned."

6. TEACHERS: RENEWING THE PROFESSION

"The working conditions of teachers must improve...

a. High school teachers should have a daily teaching load of four regular class sessions. In addition, they should be responsible one period each day for small seminars and for helping students with independent projects.

b. Teachers should have a minimum of sixty minutes each day for class preparation and record keeping...

c. Teachers should be exempt from routine monitoring of halls, lunchrooms and recreation areas...

d. A Teacher Excellence fund should be established in every school--a competitive grant program to enable teachers to design and carry out a special professional project.

e. Good teachers should be given adequate recognition and rewards--from a student's 'thank you,' to cash awards, to active support from parents...

f. Teachers should be supported in the maintenance of discipline based on a clearly stated code of conduct."

"Teachers's salaries should be increased...

a. As a national goal, the average salary for teachers should be increased by at least 25 percent beyond the rate of inflation over the next three years, with immediate entry-level increases.

Outstanding students should be recruited into teaching. We cannot have gifted teachers if gifted students do not enter the classrooms of the nation.

a. Every high school should establish a cadet teacher program in which high school teachers identify gifted students and encourage them to become teachers...

b. Colleges and universities should establish full tuition scholarships for the top 5 percent of the gifted students who plan to teach in public education...

c. The federal government should establish a National Teacher Service, especially for those who plan to teach in science and mathematics. This tuition scholarship program would be for students in the top one-third of their high school graduating classes..."

"The schooling of teachers must improve. There are serious problems with the education of our teachers.

a. Prospective teachers should complete a core of common learning, one that parallels in broad outline the high school core curriculum proposed in this report.

b. Every teacher candidate should be carefully selected. Formal admission to teacher training should occur at the junior year, the time when students begin a three-year teacher preparation sequence...

c. Once admitted to the program, the teacher candidate should devote the junior and senior years to the completion of a major, plus appropriate electives. Every

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secondary school teacher should complete a sharply focused major in one academic discipline, not in education...

d. After grounding in the core curriculum and a solid academic major, prospective teachers should have a fifth-year education core built around the following subjects: Schooling in America, Learning Theory and Research, The Teaching of Writing, and Technology and Its Uses.

e. The fifth year should also include classroom observation and teaching experience...

f. In addition, the fifth year of teacher preparation should include a series of one-day common learning seminars in which students meet with outstanding arts and science scholar-teachers who would relate the knowledge of their fields to a contemporary political or social theme.

The continuing education of the teacher must be strengthened...School boards must accept lifelong learning as an essential condition for every teacher.

a. A two-week Teacher Professional Development Term should be added to the school year, with appropriate compensation.

b. Every school district should establish a Teacher Travel Fund to make it possible for teachers, based on competitive application, to travel occasionally to professional meetings to keep current in their fields.

c. Every five years, teachers should be eligible to receive a special contract--with extra pay to match--to support a Summer Study Term...

A career path for teachers should be developed...The irony is that to 'get ahead' in teaching, you must leave it.

a. The credentialing of teachers should be separated from college preparation...

b. Before being credentialed, the candidate would also pass a written examination administered by a Board of examiners to be established in every state...

c. After credentialing, a career path based on performance should be available to the teacher, moving from associate teacher to senior teacher.

d. With each professional advancement, salary increases should be provided...

e. The evaluation of teacher performance should be largely controlled by other teachers who themselves have been judged to be outstanding in the classroom."

"Skilled professionals should be recruited to teach part-time in the nation's classrooms...

a. School districts should establish a lectureship program to permit qualified nonacademic professionals to teach on a part-time basis.

b. School districts should look to recently retired personnel...who, after brief orientation, could teach part-time in high-demand subjects.

c. School districts should enter into partnerships with business and industry to create joint appointments...

d. In-and-out teaching terms should be established--permitting a professional to teach for one to three years, step out, and then return for another one-to-three-year term.

e. A Part-Time Practitioner Credential should be created in every state to put in place the recommendations we propose."

7. INSTRUCTION: A TIME FOR LEARNING

"Much about good pedagogy is familiar. There remain, however, some old-fashioned yet enduring qualities in human relationships that still work: contagious enthusiasm, human sensitivity, and optimism about the potential of the students.

a. Teachers should use a variety of teaching styles...But there should be particular emphasis on the active participation of the student.

b. For classroom instruction to be effective, expectations should be high, standards clear, evaluation fair and students should be held accountable for their work.

c. ...The classroom use of primary source materials should be expanded.

d. ...Teachers should have a far greater voice in selecting materials appropriate to their own subject areas."

8. TECHNOLOGY: EXTENDING THE TEACHER'S REACH:

"...A number of important steps should be taken to link computers to school objectives.

a. No school should buy computers, or any other expensive piece of hardware, until key questions have been asked--and answered. Why is this purchase being made? Is available software as good as the equipment? What educational objectives will be served? Which students will use the new equipment, when and why?

b. In purchasing computers, schools should base their decisions not only on the quality of the equipment, but also on the quality of the instructional material available...

c. Every computer firm selling hardware to the schools should establish a Special Instructional Materials Fund.

d. ...Computer companies should provide technology seminars for teachers to keep them up-to-date on the uses of computers as a teaching tool.

e. A National Commission on Computer Instruction should be named by the Secretary of Education to evaluate the software now offered for school use and propose an ongoing evaluation procedure that would be available to the schools.

f. Federal funds should be used to establish ten Technology Resource Centers on university campuses...These centers would assemble, for demonstration, the latest technology.

g. ...Specifically, students should learn about computers; learn with computers; and, as an ultimate goal from computers. The first priority,...educating students about the social importance of technology, of which the computer is a part."

(NOTE: The report also includes three specific recommendations for the use of television, films and video cassettes in the schools.)

9. FLEXIBILITY: PATTERNS TO FIT PURPOSE

"...The urgent need is not more time but better use of time.

a. The class schedule should be more flexibly arranged to permit larger blocks of time, especially in courses such as laboratory science, a foreign language and creative writing.

b. Small high schools should expand their education offerings by using off-campus sites or mobile classrooms or part-time professionals to provide a richer education for all students.

c. Large high schools, particularly those with over 2000 students, should organize themselves into smaller units...

Gifted and talented students represent a unique challenge if they are to realize their potential...

a. Every high school should develop special arrangements for gifted students--credit by examination, independent study and accelerated programs.

b. A network of Residential Academies in Science and Mathematics should be established across the nation...

Special arrangements are also needed for students at the other end of the educational spectrum...

a. ...the federally funded Elementary and Secondary Education Act (Title I) should be fully funded to support all students who are eligible to participate in this effective program.

b. Every high school district, working with a community college, should have a reentry school arrangement to permit dropouts to return to school part time or full time or to engage in independent study to complete their education."

10. THE PRINCIPAL AS LEADER

"What we seek are high schools in which the school community--students, teachers, and principals--sees learning as the primary goal. In such a community, the principal becomes not just the top authority but the key educator, too.

a. The principal should be well prepared. The basic preparation should follow that of teachers.

b. A principal should complete all requirements for licensing as a teacher and serve a year as an 'administrative intern.' At least two years as an assistant principal should be served before one could assume a full principalship.

c. Principals and staff at the local school should have more control over their own budgets, operating within guidelines set by the district office...

d. Principals should have more control over the selection and rewarding of teachers...

e. In order to give principals time to reflect upon their work and stay in touch with developments in education, a network of Academies for Principals should be established."

11. STRENGTHENING CONNECTIONS

a. "All states should establish a School-College Coordination Panel to define the recommended minimum academic requirements to smooth the transfer from school to public higher education.

b. Every high school in the nation should offer a 'university in the school' program and a variety of other arrangements...to permit able students to accelerate their academic programs.

c. Each college or university should form a comprehensive partnership with one or more secondary schools.

The following school-business partnerships are proposed:

a. Businesses should provide help for disadvantaged students through volunteer tutorial and family counseling service, and support special school and part-time apprenticeship experience for high-risk students.

b. Businesses should provide enrichment programs for gifted students...

c. Businesses can provide cash awards for outstanding teachers...

d. Corporate grants should provide sabbaticals to outstanding principals and a discretionary fund for principals to work with teachers on creative programs...

e. To help improve their physical plant and science laboratories, businesses should sponsor a facilities and equipment program..."

12. EXCELLENCE: THE PUBLIC COMMITMENT

"Finally, school improvement is dependent on public commitment. How we as a nation regard our schools has powerful impact on what occurs in them...

a. Parent-Teacher-Student Advisory Councils should be established at all schools. Further, a Parent Volunteer Program should be organized to tutor students, provide teacher aides, and other administrative, counseling, and clerical support.

b. Parents should become actively involved in school board elections, attend meetings, and be willing to serve as members of the school board.

c. Boards of education should hold special meetings with representatives of the schools in the districts...at least once a year.

d. A network of community coalitions--Citizens for Public Schools--should be formed across the nation to give leadership in the advocacy of support for public education.

e. The states should recognize that their overriding responsibility to the schools is to establish general standards and to provide fiscal support, but not to meddle.

f. A new School Building and Equipment Fund should be established, a federal program that would provide short term, low interest loans to schools for plant rehabilitation and for the purchase of laboratory equipment. In the concluding remarks, this report emphasizes that not every one of the recommendations is appropriate for every school; rather, what is most important is that all high schools take steps to achieve excellence."

EXECUTIVE SUMMARY

TITLE 42nd Arizona Town Hall: Arizona Postsecondary Education in the Eighties

AUTHOR Education Commission of the States in conjunction with Arizona State University, Northern Arizona University, and the University of Arizona

DATE April 24-27, 1983

IMPETUS FOR THE STUDY

In 1966 the focus of Arizona Town Hall was higher education in Arizona. That is, the discussions and recommendations were limited to universities and community and private colleges. Because of changing economic conditions at both the state and national level, the continued increase in enrollments, with more part-time students, women, and minorities and older students, the changing demands of society with increased emphasis on technology, concerns about the preparedness of Arizona students and graduates, and the presence of "diploma mills" in the state, the 42nd Town Hall assembled at Rio Rico in 1983 to discuss and debate "issues relating to the direction postsecondary education is and should be taking the 1980's" (Arizona Postsecondary, p. ii).

METHOD

"For two days the four Town Hall panels assembled and debated issues relating to the direction postsecondary education is and should be taking in the 1980's" (ibid). One hundred twenty-seven people participated in the meeting. To facilitate the discussions, the Arizona Academy requested the Education Commission of the States (ECS) in conjunction with individuals from Arizona's three state universities to develop a research report on the subject. Additionally, the Education Commission of the States "prepared the introduction, overview chapter on postsecondary education and the final chapter on policy issues; reviewed the chapters prepared by Arizona authors to insure objective presentation; and compiled, edited, and produced the overall report" (op. cit., Letter of Transmittal). Five of the chapters in the report--"Understanding Postsecondary Education," "Structure, Organization, Governance of Arizona Postsecondary Education," "Purposes and Roles of Postsecondary Education," "Financing Postsecondary Education in Arizona," and "Public Attitudes Toward Postsecondary Education in Arizona"--and several of the addendums provide the reader with an understanding of postsecondary education in Arizona

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and, to a lesser extent, postsecondary education in a national context. Chapter 6 identified key issues for the eighties; they are highlighted in the next section.

"**Key Issues In Arizona Postsecondary Education In the Eighties**" (op. cit., p. 107)

- Quality: Among the general population, there is a concern that the quality of education has been declining. This concern has lead elected representatives to explore the issue. Within Arizona, the universities are now allowed to require a particular pattern of courses in high school in addition to minimum entrance requirements. It is emphasized that "questions of quality should be related to institutional mission" and that "state-level policy makers cannot legislate quality" (op. cit., p. 109).

Some of the many important questions to ask about quality are as follows (ibid.):

- "Does Arizona need to place additional emphasis on quality concerns?
- What types of incentives would further stimulate the pursuit of quality?
- Do goals of access and quality conflict? What balance is appropriate for Arizona?"

PLANNING

Planning may be approached formally or informally. Arizona has, to date, effectively used the latter with legislative oversight. But, because of changing conditions, it is suggested that this basic approach might be reviewed. Some of the many important questions to ask about planning are as follows (op. cit., p. 111).

- "Should the state have a formal statewide planning process to identify goals and provide overall policy direction?
- In an era of increasing fiscal constraints, are there adequate processes available to work out the difficult problems of establishing priorities and maintaining quality and access? "

GOVERNANCE

There is a great deal of variation in how the 50 states developed state-level governance structures for postsecondary education. "The 'right' answer in a given state depends on that state's history, current needs and future desires" (ibid.). "A major weakness of the current structure in Arizona is the ease with which out-of-state institutions can offer degree programs in the state and the lack of educational review of marginal institutions that incorporate for the purpose of selling degrees and diplomas. The state is known as a haven for 'degree mills,' a notoriety that detracts from an otherwise solid reputation" (op. cit., p. 112).

Some of the many questions to ask about governance are as follows (ibid):

- "Should the current state governance structure be changed?
- Should a single state agency be charged with the role of planning all segments of postsecondary education from a statewide perspective and with a view to the future?

- Is additional coordination among institutions desirable beyond present legislative mandate? If so, what is the best means to accomplish improved coordination?

- Do licensing requirements need to be strengthened?

a. for institutions in and out of state?

b. for off-campus and nontraditional programs? "

FINANCE

Unlike most other states, Arizona anticipates continued population growth and modest growth in higher education enrollments. Tuition issues continue to be important because of the traditionally low tuition in Arizona. The policy, for both in-state and out-of-state tuition, will continue to be the focus of attention.

Some of the many important questions to answer about finance are as follows (op. cit., p. 113):

- "Is the recent decline in the share of Arizona state revenues allocated to higher education a cause for concern in the future?

- Do students (both in-state and out-of-state residents) pay an appropriate share of the costs of higher education?

- Is student financial aid sufficient to overcome financial burdens for low-income students?

- Should financing policies be directly linked to quality considerations?"

RECOMMENDATIONS

The following is a summary of the recommendations of the Forty-second Arizona Town Hall (op. cit., p. xiii-xiv).

- "Formation of an ad hoc committee composed of representatives of Arizona's postsecondary institutions, knowledgeable community and industry members and legislators to review the recommendations of this Town Hall and re-examine the relationships, goals, and objectives of all segments of Arizona's postsecondary education system, reporting its findings to the Governor and to the Legislature.

- Increased coordination between the public and private sectors involved in postsecondary education.

- More active involvement between postsecondary institutions and business and industry in needs assessment and program delivery.

- Addressing present problems of the tenure system through periodic mandatory view, including student evaluation, incentives to improve performance, encouragement of the approval of an early retirement plan, and a study of any possible alternatives to tenure.

- Legislative action to address the problems of Arizona's diploma mills.

- Greater emphasis in elementary and secondary schools on reading, writing, and other communication skills, mathematics and science.

- Shared responsibility by parents and educators to raise the graduation requirements from elementary and secondary schools and to encourage and set goals and standards for achievement.

- Improved career counseling for all students.
- Increase of university admission standards by the Board of Regents.
- Maintenance of strict academic standards for all students.
- Continuation and strengthening of the honors program for gifted students.
- Encouragement of Arizona's brightest students to enter the teaching profession.
- Better organization and management of existing financial aid funds and better dissemination of information to students about existing sources of financial aid.
- Encouragement of out-of-state and foreign students to attend Arizona's postsecondary institutions.
- No creation of new four-year institutions or establishment of four-year programs with Arizona's community college system at this time."

EXECUTIVE SUMMARY

TITLE Transforming the State role in Undergraduate Education: Time for a Different View

AUTHOR The Working Party on Effective State Action to Improve Undergraduate Education, Education Commission of the States

DATE July 1986

IMPETUS FOR THE STUDY

"The commissioners of the Education Commission of the States want to know what constitutes effective state action to improve undergraduate education" (Transforming, p.2).

METHOD

Not specified.

Challenges facing the nation's colleges and universities and brief explanations are listed below (op. cit., pp. 11-20):

1. "TO PREPARE STUDENTS FOR THE WIDE RANGE OF OPPORTUNITIES OFFERED BY A CHANGING WORK FORCE AND SOCIETY.

- Students' educational and career aspirations are no longer consistent with what is increasingly considered necessary preparation for graduate or professional studies, work and lifelong learning. Nor are most undergraduate programs preparing students for citizenship and social responsibility in a world made extraordinarily complex by issues such as nuclear proliferation, genetic engineering and urban renewal. These issues cannot be left entirely to specialists; they require the informed judgment of educated citizens.

2. TO IMPROVE STUDENTS' PREPARATION FOR COLLEGE.

- Too many students are entering college without the knowledge, skills and attitudes necessary for success in college. This gap will inevitably widen as the nation changes its expectations about what people should know.

3. TO IMPROVE OVERALL RATES OF COLLEGE PARTICIPATION AND COMPLETION.

- College participation and completion rates, especially for minorities, are declining at a time when educational attainment should be rising.

4. TO MEET THE EDUCATIONAL NEEDS OF AN INCREASINGLY DIVERSE STUDENT POPULATION.

- Dramatic changes in student demography can no longer be accommodated by undergraduate programs initially designed for a more affluent, homogeneous student population.

5. TO BUILD GREATER STUDENT INVOLVEMENT IN THE UNDERGRADUATE EXPERIENCE.

- Current educational policies and practices do not ensure active student involvement in the undergraduate experience. Nor do they reflect what is known about effective teaching and learning.

6. TO IMPROVE ASSESSMENT OF STUDENT AND INSTITUTIONAL PERFORMANCE.

- The need to use assessment to improve teaching and learning is not reflected in current policies and practices.

7. TO MOTIVATE FACULTY AND REWARD THEM FOR IMPROVING UNDERGRADUATE EDUCATION.

- The current reward system and working environment do not support faculty involvement in undergraduate education or its improvement.

8. TO CARRY OUT MORE SHARPLY DEFINED INSTITUTIONAL MISSIONS.

- The need to define institutional missions more sharply is not reflected in current policies and practices at both state and institutional levels."

RECOMMENDATIONS

Five broad strategies for addressing the challenges facing higher education are presented below. Under the broad strategies are listed 22 specific recommendations (op. cit., pp. 22-34). The recommendations are intended for state leaders and designed to assist them in transforming the state role in higher education to meet the aforementioned challenges.

"PLACE THE CHALLENGES FACING UNDERGRADUATE EDUCATION ON THE PUBLIC AGENDA.

1. Improve public awareness of the importance of undergraduate education.

2. Find out how challenges facing undergraduate education manifest themselves in the state.

3. Expect higher education boards and agencies to ask broad questions, provide direction and promote improvement in undergraduate education.

4. Sponsor statewide forums about undergraduate education.

5. Consult faculty on key issues.
6. Find out what alumni and former students think about their undergraduate experiences.
7. Urge professional associations, accrediting bodies and employers to speak out on what constitutes necessary preparation for work.

INCORPORATE THE IMPROVEMENT OF UNDERGRADUATE EDUCATION INTO COMPREHENSIVE STATE STRATEGIES FOR EXCELLENCE IN EDUCATION.

8. Inform students of new or revised standards for admission and give them the resources and time they need to meet those standards.
9. Match requirements for remediation with support for remediation.
10. Consider establishing 'early assessment' programs.
11. Encourage schools and colleges to provide educational alternatives for 16-year-old students.
12. Strengthen programs for assessing the educational needs of new and returning students.

ENABLE COLLEGES AND UNIVERSITIES TO IMPROVE UNDERGRADUATE EDUCATION.

13. Delegate responsibility to institutional leaders, enable them to improve undergraduate education, and encourage creativity and risk taking.
14. Evaluate all state policies on higher education for their potential impact on undergraduate education.
15. Encourage institutions to strive for excellence that reflects their distinctive mission in undergraduate education.
16. Provide incentives to institutions for encouraging faculty to improve undergraduate education.

ALLOCATE RESOURCES TO COLLEGES AND UNIVERSITIES IN WAYS THAT CREATE A POSITIVE ENVIRONMENT FOR CHANGE.

17. Find out how current funding policies affect the quality of undergraduate education.
18. Rely more on incentives and less on regulation to promote improvement.
19. Give institutions (and/or campuses) financial/management flexibility and eliminate negative incentives for improvement.
20. Curb the expansion of student indebtedness.

ENCOURAGE THE USE OF MULTIPLE METHODS OF ASSESSMENT TO IMPROVE STUDENT AND INSTITUTIONAL PERFORMANCE.

21. Monitor the effectiveness of the state's system o higher education in meeting state goals for undergraduate education; report results periodically.
22. Encourage each institution to develop its own 'indicators of effectiveness' in undergraduate education; report results periodically."

EXECUTIVE SUMMARY

TITLE Searching for Academic Excellence: Twenty Outstanding Colleges and Their Leaders

AUTHORS Gilley, Fulmer and Reithlingshoefer

DATE 1986

IMPETUS FOR THE STUDY

"Our motives for writing this book arose from a deep concern for higher education in America today, and for its future. The book focuses primarily on the question of where the leadership, desperately required as America and its colleges and universities move toward the twenty-first century, is to be found" (Searching, p. v).

METHOD

In 1984 the authors began to search for a broad array of institutions that were "on-the-move". To identify these colleges, letters were sent to thirty prominent educators asking for nominations of schools they considered "moving toward new levels of excellence or effectiveness" (op. cit., p. 8). Twenty-four replies were received which contained a total of 112 nominations. Discussions with the Advisory Committee and others were undertaken to identify criteria for the selection of the finalists. Strong reasons for the nomination and nomination by more than one person, reduced the list to fifty-two institutions. Information was requested from this latter group, and forty-two institutions responded. Thirty colleges and universities were selected as candidates for field study after the materials they provided were reviewed. Because of time constraints, logistics and redundancy, nine of the thirty institutions were not visited. Of the remaining twenty-one institutions, one was used as a test site for the study. Field visits to the twenty institutions selected, including Northern Arizona University and the Maricopa Community College district, and institutional reports provided the data from which the authors delineated "a set of characteristics common to most of the institutions" and "a separate group of common characteristics describing the presidents of these schools" (op. cit. p. 11).

FINDINGS

(op. cit., pp. 11-12):

1. "In the twenty institutions we visited, there was not one instance of a state coordinating board level initiative that improved quality: promoted efficiency; addressed a major societal or educational issue; encouraged an institution to seek new levels of excellence; or anticipated trends or issues...

2. Despite the great variety in size, mission, control, and location, we found ten characteristics that are each common to a least three-fourths of the twenty institutions. (These ten fundamentals follow this section of the summary.)

3. At practically all of these twenty colleges and universities, the motivating forces responsible for the attainment of new levels of effectiveness, excellence, and recognition were location, adversity, and most importantly, leadership. Leadership was in fact a strong force present in every one of the

institutions.

4. We discovered, quite unexpectedly, that most of the leaders of these schools brought with them to the presidency a special quality, a unique preparation for the position, a conceptual framework on which to build their administration. That quality we labeled the parallel perspective...

5. Finally, we discovered nine emerging administrative trends among the twenty successful institutions, practices that may be harbingers of the future in higher education..."

TEN FUNDAMENTALS OF THE ON-THE-MOVE INSTITUTIONS

1. STRATEGIC MISSION ORIENTATION

In these 20 institutions a statement of direction and the anticipated future were an element of official policy and the mission statement was known and continuously discussed throughout the institution. "The future academic character of the school is delineated in this document and the school's ambitions are clearly state. The document addresses contemporary issues and concerns and cultivates external support for the school: but, above all else, it takes a stand on the importance of quality, plainly showing that if its stated goals are achieved, the students themselves will reap the greatest benefits" (op. cit., p. 20).

2. SUPPORTIVE BOARDS OF TRUSTEES

Although three types of boards existed among the sample and the board type determined the role, boards, in most cases, were viewed as highly supportive and an important factor in the perceived success of their respective institutions.

3. THE PRESIDENT

Although the contributions of many individuals were recognized, the interviews with 300 community leaders, national higher education professionals, university presidents, deans, faculty, and students emphasized the key role presidents have played in the growth of these institutions. This conclusion is "in stark contrast to the findings of Clark Kerr in his recent Association of Governing Boards-sponsored study (1985)" (op. cit., p. 26).

4. TEAMWORK

The institutions in this study, unlike many institutions of higher education, exhibited teamwork and the interaction of personnel throughout the institution. Top administrators assembled an administrative team shortly after assuming their current posts. It is important to note, however, that teamwork did manifest itself in different ways within the sample.

5. KEEPING AN EYE ON THE COMMUNITY

Each of these institutions demonstrated a knowledge of their community and was effective at maintaining close relationships.

6. THE IDEA THAT INDIVIDUALS MAKE A DIFFERENCE

"We found an atmosphere allowing individuals throughout the institution to exercise initiative at all of our strategically oriented schools on the move" (op. cit., p. 34). Two factors were identified as critical to this atmosphere: a universally understood institutional development plan and administrators who encourage initiative and allow for mistakes.

7. COMMITMENT TO THE INSTITUTION

There was a high degree of commitment by both faculty and staff to their institutions, and it was "expressed in pride, concern for students, and an emphasis on teaching in practically every case" (op. cit., 13).

8. CONCERN FOR FACULTY AND STUDENTS

These institutions demonstrated an "almost familial interest in faculty and students; and there was an intense concern for the quality of education provided for students" (op. cit., p. 38).

9. OPPORTUNITY CONSCIOUSNESS

"...opportunity consciousness is a characteristic found not only among presidents, but also among boards and faculty" (op. cit., p. 39). The missions at these institutions addressed the current societal concerns regarding higher education.

10. COMMITMENT TO QUALITY AND EXCELLENCE

Each institution studied exhibited an intense commitment to quality and excellence. These institutions are reaching for lofty goals.

PRESIDENTIAL CHARACTER

Fourteen presidential qualities were identified as a result of this study.

1. INTELLIGENCE AND CREATIVITY

"These leaders were constantly on the lookout for ideas that could have practical value for their school" (op. cit., p. 59).

2. FAR-RANGING VISION

In almost every one of these individuals was "a perceptive awareness of campus needs, coupled with the ability to assess an idea and bring possibility and reality together" (ibid.).

3. PERSISTENCE

This group exhibited a "dogged persistence" and the ability to adjust to changes as necessary.

4. SHAPING THE WORKING ENVIRONMENT

Constantly shaping both the physical and psychological environments, these presidents can be categorized as proactive.

5. OPPORTUNITY CONSCIOUSNESS

The presidents of these institutions attend to their environments, attitudes of people and the values of society, and then they use change to the advantage of their institutions.

6. BUILDING AND SUSTAINING A TEAM

Administrative teams were assembled by the presidents just after they were appointed.

7. FOSTERING GOOD PUBLIC RELATIONS

   These institutions had established good public relations and had high visibility in their state and local communities. "...all of these presidents have a knack for public relations" (op. cit., p. 63).

8. KEEPING THE DOOR OPEN

   The presidents of these institutions were open and accessible.

9. THROW THE BOOK OUT THE WINDOW

   It was found that these individuals were effective at delegating, cut across organizational lines to communicate, and were not overly concerned with organization.

10. A VISIBLE PRESENCE

    For the most part, the presidents maintained a high visibility on campus.

11. CONSERVATIVE GAMBLERS

    Most of these individuals "work feverishly to minimize risk at every step of the way" (op. cit., p. 65).

12. NO LITTLE NAPOLEONS

    "The key to the matter seems to be, for a leader, building a base of support early--gaining respect and acceptance by being low key, pleasant, and noncontroversial" (op. cit., p. 66).

13. COMPASSION

    These presidents were considered by individuals on their own campuses to be compassionate.

14. THE PARALLEL PERSPECTIVE

    "The most distinctive [quality] is a unique factor we call 'parallel perspective'...these leaders came to the presidency of these particular institutions with a highly developed conceptual framework on which to build a plan for moving their new institution forward" (op. cit., p. 14).

TRENDS IN ADMINISTRATIVE PRACTICES

The authors have identified the following prominent trends as a result of their observations (op. cit., pp. 81-2):

1. "The use of initiative as a strategic management tool is becoming common.

2. Three new power brokers are emerging on campus: the admissions, computer, and development offices.

3. Efforts to improve higher education are being instigated from the bottom up rather than the top down.

4. High priority is being given to image building.

5. The institutional exploitation of alternate financial resources is increasing.

6. Traditional management structures are being dismantled.

7. An intense focus on quality is developing.

8. Attention to strategic planning is on the rise.

9. Increasingly strong relationships with business and industry are becoming common."

IDEAS AND SUGGESTIONS FOR BOARDS, PRESIDENTS AND OTHERS

In this chapter the authors provide many specific recommendations for evaluating the position of an institution, a president, and developing steps for a president to get an institution back on track. The questions address four areas: "assessment of institutional movement; selecting a leader with the right qualifications and perspective; getting an institution moving; and suggestions for building 'on-the-move' qualities" (op. cit., p. 95).

EXECUTIVE SUMMARY

TITLE To Reclaim a Legacy: A Report on the Humanities in Higher Education

AUTHOR William J. Bennett

DATE November 1984

IMPETUS FOR THE STUDY

Not stated.

METHOD

A study group comprised of 31 prominent teachers, scholars, administrators, and authorities on higher education was assembled by William J. Bennett, Secretary of Education, in March 1984. The purpose of the study group was to examine the state of learning in the humanities in higher education. The group sought answers to three questions: "What is the condition of learning in the humanities; why is it as it is; and what, if anything, should be done about it?" (To Reclaim, p. i). To formulate answers to these questions the study group held three public meetings during the spring and summer of 1984. Additionally, the group relied on four kinds of information during their discussions (op. cit., p. ii):

- "Detailed descriptions of graduation requirements of fifteen colleges and universities representative of a diversity of institutions.
- Reports prepared by study group members on the humanities in secondary education, two-year colleges, and graduate schools.
- Papers written by individual members of the study group recommending ways to improve teaching and learning in the humanities.
- Data from several national studies and surveys pertaining to undergraduate education and to the humanities in general."

Secretary Bennett wrote the report, assumed full responsibility for its contents, but, simultaneously, he acknowledged the substantial degree to which the Study Group on the State of Learning in the Humanities in Higher Education informed this work.

GENERAL CONCLUSION

"Although more than 50 percent of America's high school graduates continue their education at American colleges, few of them can be said to receive there an adequate education in the culture and civilization of which they are members" (op. cit., p.1).

SPECIFIC FINDINGS

- Many colleges and universities do not have a clear sense of the purpose of education or the importance of the humanities.
- "The humanities, particularly the study of Western civilization, have lost their central place in the undergraduate curriculum..." (To Reclaim, p.1).
- "A student can obtain a bachelor's degree from 75 percent of all American colleges and universities without having studied European history, from 72 percent without having studied American literature or history, and from 86 percent without having studied the civilizations of classical Greece and Rome" (op. cit., p.1-2).
- In 1966 approximately 90 percent of the colleges and universities required foreign language study for the bachelor's degree; by 1984, that figure had dropped to less than half.
- Many undergraduates take humanities courses only during their first two years of college.
- The numbers of students majoring in the humanities has declined since 1970.
- "Too many students are graduating from American colleges and universities lacking even the most rudimentary knowledge about history, literature, art, and philosophical foundations of their nation and their civilization" (op. cit., p. 2).
- The decline in learning in the humanities was caused in part by both college faculties and administrators.

a. Within the text of the report, the study group criticized institutions for employing part-time faculty and graduate students in teaching lower-division humanities courses (op. cit., p. 15).

RECOMMENDATIONS OF THE STUDY GROUP

(To Reclaim, p. 2)

- "The nation's colleges and universities must reshape their undergraduate curricula based on a clear vision of what constitutes an educated person, regardless of major, and on the study of history, philosophy, languages, and literature.
- Colleges and university presidents must take responsibility for the educational needs of all students in their institutions by making plain what the institution stands for and what knowledge it regards as essential to a good education.
- Colleges and universities must reward excellent teaching in hiring, promotion, and tenure decisions.
- Faculties must put aside narrow departmentalism and instead work with administrators to shape a challenging curriculum with a core of common studies.
- Study of the humanities and Western civilization must take its

place at the heart of the college curriculum. Suggestions for implementing these recommendations are contained in the body of the report."

EXECUTIVE SUMMARY

TITLE Choosing Quality: Reducing Conflict Between the State and the University

AUTHOR Frank Newman

DATE September 1987

IMPETUS FOR THE STUDY

"The decision to address this relationship [the relationship between the university and the state] grew out of discussions over the growing importance of state universities, the development of new forms of governance and the increasing concern that state efforts to manage universities were often counterproductive, preventing the very focus on quality that the public needs and that state government should want. From these discussions, we concluded that the nature of the relationship between the state and the university was of critical importance and yet was imperfectly understood. The need was to address this relationship practically and not just theoretically (Choosing, Prologue)."

METHOD

The literature on state governance of higher education was reviewed, discussions with many scholars were held, and case studies of state/university relationships were conducted through interviews with governors, legislators, budget officers, auditors, legislative staff, governors' policy aides, university presidents and former presidents, board members, executive officers of coordinating and governing boards, university vice presidents, deans and other university officials. The focus of this study was on the major state universities, of which there are approximately 100.

OBSERVATIONS

- The relationships between states and their universities vary greatly, ranging from constructive partnerships to antagonism and mutual distrust.
- The state often turns to the university for assistance with complex social issues and economic competition.
- The relationship between the state and the university is not fixed, but is the result of conscious decisions, and these decisions ultimately impact the level of quality of the university.
- "At its best, the relationship between the state and the state university is an appropriate effort by those elected and appointed to state office to set goals, allocate resources, hold accountable and encourage those who govern the state university. We have called this appropriate public policy. Inappropriate intrusion is characterized by attempts by those in state government (or the university) to interfere with the operation of the university either to serve ends that are questionable in themselves or to serve ends that may or may not be appropriate through means that are questionable" (op. cit., p. 2). It is

important to recognize, however, that intrusion may difficult to define or identify because inappropriate intrusion may evolve over time or lack documentation.

- Inappropriate intrusion takes three forms:

a. bureaucratic intrusion: This form of intrusion "stems from the overregulation of activities that are usually legitimate but by means that ultimately interfere with the ability of the university to perform its function in a timely, efficient and creative manner" (op. cit., p. 23).

b. ideological intrusion: "Ideological intrusion represents the attempt to interfere with the affairs of the university by preventing or insisting upon an activity on ideological grounds" (op. cit., p. 24).

c. political intrusion: This is the "interference in a decision to enhance the political interest of someone or some group in state government" (op. cit., p. 27).

- The relationship between he state and their universities is becoming more complex, is often ambiguous, and, in some cases, deteriorating. There is not a "typical" state but, rather, 50 different approaches to this relationship. "Some states have gradually developed a tradition of trust and positive interaction that has been a powerful aid in creating universities of high quality. In other states, the opposite has occurred. Inappropriate intrusion and failure of campus leadership has led to institutions of lesser quality" (op. cit., p. 36).

- Ten factors that cause intrusion have been identified; they are as follows (op. cit., p. 59):

1. "confusion over institutional missions, compounded by the unchanneled ambitions of some colleges and universities ;
2. overlap of institutions and programs and even a sense, in a few states, that there are too many colleges and universities;
3. a focus of boards and systems on administrative matters rather than policy;
4. a need for more effective leadership--at the campus, the system or board and at the state;
5. the desire of political leaders to force the university to respond to changes in the state's economy, geography and demography;
6. the tendency of some political leaders to look toward self-interest rather than public interest;
7. the desire of bureaucracies at all levels to exercise power;
8. patterns of funding and criticism that create counterproductive incentives for universities;
9. campus attempts to subvert the ordinary mode of governance to achieve short-term gains or to serve narrow self-interests; and
10. the failure of those on campus to take state leaders and state needs seriously."

- The university is unlike any other state agency because of the nature of teaching, learning and scholarship. To accomplish these ends, autonomy and flexibility are critical. Yet, there must be a system of checks and balances in a constructive relationship. "Left totally on its own, the university will evolve toward self-interest rather than public interest" (op. cit., p. 8).

- From the interviews, the author concluded that "there is a perception that the involvement of the state into the affairs of the university is growing" (op. cit., p. 9).

- "States need to develop a variety of policy tools that allow them to set the appropriate climate that draws the university toward quality...A range of options can provide the state with choices that better match means to goals--the elimination of out-moded bureaucratic controls that provide disincentives for institutions to assume responsibility for improving their internal management, state leadership in setting an agenda for reform, the initiation of state competitive grant programs that reward universities for entrepreneurial efforts to strengthen programs consistent with their missions, steps to inhibit efforts to circumvent the governance process by those within the university, public support of those academic leaders who take the risks that are part of building toward quality and the use of governing boards and multi-campus systems in ways that create a climate of excellence (op. cit., pp. 69-70)."

- The state must encourage initiatives for change from within the universities by creating the appropriate climate.

- The evidence suggests that three ingredients are necessary for building a constructive state/university relationship:

1. aspiration: This is the most important ingredient. It is the aspiration to have a university of high quality. Without the shared aspiration to build a first-rate university, it will not happen.

2. tradition: "...where the university is of high quality and where the state/university interaction is constructive, a web of relationships built up over time protects and encourages the university and yet ensures that the university is accountable. We call this web tradition. A tradition of constructive relationship may deteriorate or a tradition of poor relationship may be improved, but the latter takes conscious effort" (op. cit., p. 87).

3. leadership: Leadership must be exhibited by a variety of individuals in the university and the state. That is, these individuals must have a vision of a great university, a willingness to work to make the necessary changes, the ability to empower others, the willingness to take the necessary risks, and the ability to focus on excellence in the longterm.

Newman concludes with four sets of recommendations; they are as follows (op. cit., pp. 97-100):

WHAT MUST A UNIVERSITY DO TO BE GREAT?

1. "The university must have a sense of its niche, its particular role among other institutions of higher

education, its particular programs and characteristics in which it is outstanding...

2. While it must succeed at the task of research and graduate education, it must also devote the energy to excel at undergraduate education.

3. The university must create a climate that will attract a president, deans, faculty and students of high quality. It must be a place where people of diverse backgrounds involve themselves in teaching and learning, research and scholarship with the shared expectations of high standards. But the expectation of high standards must not stifle the taking of risk and the exploration of new ideas...

4. The university must move to ensure freedom for all points of view on campus...

5. Campus leadership must have the courage to set standards, evaluate results, eliminate outmoded or ineffective programs and search relentlessly for ways to improve.

6. The university must take those actions that are needed and responsible so that state frustration does not lead to inappropriate actions...

7. The essential exercise of institutional striving must take place within a clearly understood mission that is shared with the board and the state and must avoid constant attempts to subvert that mission for reasons of self-interest.

8. The university must take the state leadership seriously, must recognize the state has legitimate interests and an important role in higher education."

WHAT MUST A BOARD DO TO ENCOURAGE A UNIVERSITY TO GREATNESS?

1. "The agenda is an important key. Boards should be sure that their agenda focuses on policy and not on issues of daily management. A critical board function is to ask the hard but fundamental questions: Is quality improving? Is the quality of the faculty improving? Who is admitted and why? How does the administration know how much students are learning? How many of those who enter complete their studies? How many Blacks and Hispanics enter and complete?...

2. Boards must think about how their action will affect the presidents and other institutional leaders. They need to act in ways that encourage their chancellor or president to take intelligent risks in order to attack the difficult problems that stand in the way of reaching high quality, such as the reallocation of resources...

3. Boards need to spend some of their time seeing actual programs and real, live students...

4. A system of pre-screening of board appointments is essential to quality.

5. Boards need courage--courage to challenge the institutional leadership with the right questions; to challenge political leadership when inappropriate intrusion occurs; to challenge the state to address important problems through appropriate use of the higher

education system; and to be self-disciplined enough to avoid getting into the wrong issues."

WHAT MUST A SYSTEM DO TO ENCOURAGE A UNIVERSITY TO BE GREAT?

1. "The system must support and enhance campus leadership, including support of risk-taking and striving for quality.

2. The system must buffer the campuses from inappropriate intrusion and not create more of its own.

3. With the participation of the board, the campuses and the state government, the system must create clear, specific missions for each campus and enforce them.

4. The system must work out long-term corrections for geographic mismatches.

5. The system must provide the flexibility and autonomy necessary for campuses by delegating to them matters of daily administration.

6. The system must demand and get from the institutional leadership the answers to those critical questions that sum up to the accountability to the public and that allow the system to delegate the responsibility for daily administration to the campuses.

7. Where necessary, the system must campaign to eliminate unnecessary bureaucracy from the state or from itself.

8. The system must be a force for continuing change to ensure that the university continues to evolve to meet the needs of the state and that it constantly moves toward higher quality."

WHAT MUST THE STATE DO TO ENCOURAGE A UNIVERSITY TO GREATNESS?

1. "The state should create incentives to ensure needed decisions that should be made on campus are made there and resist the temptation to make them by legislative mandate...

2. It should take clear steps to reduce unnecessary regulation or cumbersome bureaucracy while defining more clearly campus responsibilities.

3. It should insist that the appropriate planning body establishes, with the participation of the campuses, clear, appropriate, understood and shared missions for each campus that meet the current and anticipated needs of the state.

4. The state government must support, by recognition and incentives, the differing missions and, by encouraging different pyramids of prestige, support the value of different types of institutions.

5. Legislators should avoid joining with local campuses to subvert a rational statewide plan for the development of higher education.

6. The state government should ensure that the form of funding for the university meets state purposes and does not create wrong incentives or punish sensible

behavior.

7. The governor and legislators must support boards, chancellors and presidents who take the risks inherent in building a great and responsive university and analyze state actions to prevent unthinking disincentives to risk-taking.

8. The state should set the agenda for quality by actions and speeches of the governor and legislators...

9. Those in state government should use information wisely by monitoring the more important issues that bear on public needs...taking care to obtain relevant data and recognizing the need for multiple and nonsimplistic indicators.

10. The state must believe in and insist on a university of quality."

EXECUTIVE SUMMARY

TITLE Higher Education and the American Resurgence

AUTHOR Frank Newman

DATE 1985

IMPETUS FOR THE STUDY

Elementary and secondary schools have been the focal point of educational reform in recent years. Now, that focal point has shifted to higher education, and both the purposes and quality of higher education are being questioned. This report was intended to extend and deepen these debates.

METHOD

A panel comprised of seven people engaged in discussions, reviewed drafts, searched out information, and provided many insights, but the final report was written by Frank Newman. In addition to the work of the panel, a research team was assembled, and discussions were held with hundreds of people around the country--faculty, researchers, business leaders, students, librarians, government officials, and administrators of programs. Finally, many discussions were held with the Carnegie Foundation Board.

FINDINGS

- "The most critical demand is to restore to higher education its original purpose of preparing graduates for a life of involved and committed citizenship. It is a need which arises from the unfolding array of societal issues of enormous complexity and seriousness--issues such as how to accelerate the integration of growing and diverse minorities, how to control the continuing proliferation of nuclear arms, how to reduce the dangers of toxic wastes" (Resurgence, p. xiv).

- The most visible demand is the need to become more effective economically. American must be able to compete in an international economy.

- "We must all recognize the demands that the American role of leadership in the world places on higher education--leadership in the best and fullest sense of that word. Economic leadership is involved, as is scientific and technological leadership. But more is involved--cooperative efforts at home and abroad, a willingness to face the difficult social and political problems, and a determination to work toward constructive solutions" (op. cit., p. xvi).

CRITICAL ASSUMPTIONS

- Access: Access must include not only entry into higher education by members of minority groups, but it must focus on outcomes as well. Higher education must do a better job of drawing people from all segments of society into programs that will lead to positions of leadership in the country.

- Oversupply: There has been a concern as to whether there will be enough good jobs for college graduates. Current trends of jobs and degrees indicate an improving market for graduates. The significant issues are, however, "whether education makes a difference in the quality of life of those who attend, and whether graduates feel empowered--ready to remake the world they find" (op. cit., p. xvii).

- Expertise: "Much attention has been focused on whether higher education is graduating a large enough pool of technically trained manpower to meet the needs of an advanced technological society. We believe the answer is probably yes. A more urgent question is whether graduates, in all fields, have the ability to be innovative, the will to take the necessary risks, the capacity for civic responsibility, and the sensitivity to the international nature of the world to be effective in today's society" (ibid.).

- Research: The academy must be at the forefront in both research and technology if the United States is to remain competitive. "Universities have accepted their role in the generation of research, but have been slower, except in a few selected fields, to accept their role in the development of new technologies" (ibid).

- Funding: The pressing problem in the higher education community is not more funding, although more funding is needed in many areas, but the use of the resources that are currently available.

Policy Recommendations for Assisting American Higher Education to Meet its Expanded Responsibilities

- "Students must become more actively involved in their own learning" (op. cit., p. xviii). The opportunities for involvement are not limited to the academic process but include work and internships.

- "In order to encourage students to engage in community service as well as to meet critical social needs, more student aid should be given in return for community service" (ibid.). A Public Service Fellows program for teaching should be established to help meet the shortage of math and science teachers and teachers willing to work in urban areas.

- The use of merit as a means of determining aid should not be allowed to detract from need-based and service-based aid.

- The sum of student aid programs should be expanded. Pell grants and work-study programs should be the cornerstone of student aid to insure access to those of limited incomes.

- "The balance among the differing types of student aid programs should be altered so that public service programs are increased; Pell grants increased; work-study expanded in both volume and in the scope of jobs provided; and loans reduced as a means of financing students" (op. cit., p. xix).
- Work-study should be expanded to include a larger portion of those that receive aid; the significance of the jobs increased; and institutions encouraged to use 20 percent of their work-study funds for public service. Additionally, it is recommended that a competitive grant program be introduced in which institutions would propose ways of employing undergraduate students in more responsible, active jobs.
- "The rapidly increasing dependence on loans as a means of financing students is alarming and must end"... (ibid.).
- In addition to restoring the GI Bill, a program similar to the GI Bill should be established in which student aid is provided in return for community service.
- "To improve minority participation in higher education, we propose that a new agency be created, the National Opportunity Fund...specifically designed to support competitive programs for disadvantaged students..." (op. cit., p. xx).
- The opportunities for international study should be expanded. Specifically, the Fulbright program should provide fellowships for an exchange of undergraduate and immediate postgraduate students; for exchange of high school teachers on a regular basis; for recruiting of faculty for Latin America, Africa and Southeast Asia. Institutions should create opportunities for an increased share of their students to study abroad.
- The current balance between targeted and centralized research is appropriate. "All federal support of any nature for university research should be based on careful measures of merit with primary dependence on peer review" (ibid.).
- "The total support for basic research should continue to grow. Within that total, the share of all basic research funds devoted to economic developments should be increased, that for health sciences should be held at its present level, and that for defense should be decreased" (ibid.).
- "The basic diversity of research laboratories should be retained" (ibid). More funds should go toward university laboratories and less toward federal laboratories; and ineffective centers or programs, particularly federal laboratories, or those with unclear missions should be eliminated.
- "The National Science Foundation and the mission agencies should expand their support of university-based applied research. NSF should continue to fund new university/industry research centers,

encouraging competing approaches..." (op. cit., p. xxi).

- The primary responsibility to improve instrumentation and facilities should be assigned to the National Institutes of Health and the National Science Foundation, and some part of their funding should be targeted for instrumentation for developing institutions. Further, "funding agencies should allow universities to set aside a fixed percent, up to 10 percent, of research overhead expenses to be placed in a fund for future instrumentation needs" (ibid.).

- "Four regional periodical centers, run as consortia by the major research libraries, should be established in order to provide immediate delivery, often electronic, of articles and other materials" (ibid). A group, comprised of key administrators, library and government personnel, should work toward developing a model for the next generation of scholarship information systems.

- "The National Science Foundation program of grants for engineering, computer science, and related graduate fellowships should be funded for a period of five years. The grants should be concentrated on the first three years of the student's graduate experience..." (op. cit., p. xxii).

- "The federal government should allow each university to retain a sum of up to 3 percent of the overhead recovery of federal research grants, up to a maximum of $500,000, for the purposes of seed money to fund new researchers just getting started or those researchers beginning a new field of research and unable as yet to attract funds" (ibid.). Foundations and corporations are urged to provide some funds for new researchers to counteract the tendency to support only known people in established fields.

EXECUTIVE SUMMARY

TITLE A Nation at Risk: The Imperative for Educational Reform

AUTHOR The National Commission on Excellence in Education

DATE April 1983

REASON FOR THE STUDY

On August 1981, the Secretary of Education, T.H. Bell, created the National Commission on Excellence in Education and directed it to examine the quality of education in the United States. The impetus for creating the 18 member commission was the Secretary's concern about the public perception that "something is seriously remiss in our educational system" (A Nation, p. 1).

CONDITION AT THE TIME OF THIS REPORT

"...the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people" (op. cit., p.5).

The Commission's specific charges included (op. cit., pp. 1-2):

- assessing the quality of teaching and learning in our Nation's public and private schools, colleges, and universities;

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- comparing American schools and colleges with those of other advanced nations;
- studying the relationship between college admissions requirements and student achievement in high school;
- identifying educational programs which result in notable student success in college;
- assessing the degree to which major social and educational changes in the last quarter century have affected student achievement; and
- defining problems which must be faced and overcome if we are successfully to pursue the course of excellence in education.

METHOD

The Commission relied primarily upon five sources of information:

- "papers commissioned from experts on a variety of issues" (op. cit., p. 2);
- eight meetings of the full Commission, six public hearings, two panel discussions, a symposium, and regional meetings at which teachers, administrators, students, parents, representatives of professional and public groups, business leaders, scholars and public officials testified;
- "existing analyses of problems in education" (ibid.);
- letters with extensive comments from citizens, teachers, and administrators; and
- "descriptions of notable programs and promising approaches to education" (op. cit., p. 3).

SPECIFIC FINDINGS

FINDINGS REGARDING CONTENT

- The proportion of students taking general track courses increased from 12 percent in 1964 to 42 percent 1979.
- A combination of extensive student choice and the curricular smorgasbord explains much of the current situation. For example, only 6 percent of all high school students complete calculus, although 60 percent enroll; only 31 percent of recent high school graduates have completed intermediate algebra.
- Twenty-five percent of the credits earned by general track high school students are in health, personal development, remedial coursework, and work experience.

FINDINGS REGARDING EXPECTATIONS

- Expectations are communicated to students explicitly through high school graduation requirements and college admissions requirements. Implicitly, expectations are communicated by grades and the level of mastery of subject matter they represent, by the presence or absence of rigorous examinations before receiving a diploma or degree, and by the difficulty of the subject matter in assigned readings and texts.
- "The amount of homework for high school seniors has decreased...and grades have risen as average student achievement has been declining" (op. cit., p. 19).

- "In many other industrialized nations, courses in mathematics, biology, chemistry, physics, and geography start in grade 6 and are required of all students" (op. cit., p. 20).
- A 1980 survey revealed that only eight States require high schools to offer foreign language instruction but none requires the students to take the courses. "Thirty-five States require only 1 year of mathematics and 36 require 1 year of science for a diploma" (ibid.).
- "In 13 States, 50 percent or more of the units for graduation may be electives chosen by the student" (ibid.).
- Minimum competency examinations, required in 37 States, have tended to become the maximum.
- One-fifth of all public four-year colleges must accept every high school graduate within the state regardless of the program followed or grades.
- The general level of selectivity, at 23 percent of the more selective institutions, declined during the 1970s.
- During the past decade a large number of texts have been "written down" by publishers.
- A recent study indicated that a majority of students could master 80 percent of the subject-matter texts before they had opened the books.
- During the past 17 years, the expenditures for instructional materials and texts have declined 50 percent.

FINDINGS REGARDING TIME

(op. cit., p. 21):

- "Compared to other nations, American students spend much less time on school work.
- The time spent in the classroom and on homework is often used ineffectively.
- Schools are not doing enough to help students develop either the study skills required to use time well or the willingness to spend more time on school work."

FINDINGS REGARDING TEACHING

- "Not enough of the academically able students are being attracted to teaching. Too many teachers are being drawn from the bottom quarter of graduating high school and college students" (op. cit., p. 22).
- Teacher preparation programs need substantial improvement. The curriculum is often heavily weighted with educational methods courses at the expense of courses in subjects to be taught.
- Teachers salaries are low, and many are required to supplement their income with part-time and summer work. In addition, teachers have little influence in critical professional decisions.
- Although there may be an overpopulation of teachers in general, severe shortages exist in mathematics, science, foreign languages, and special education.

o "Half of the newly employed mathematics, science, and English teachers are not qualified to teach these subjects" (op. cit., p. 23).

RECOMMENDATIONS

Each of the recommendations, except for teaching, is followed by a number of implementing recommendations in the original report. The implementing recommendations have been omitted below.

CONTENT

"We recommend that State and local high school graduation requirements be strengthened and that, at a minimum, all students seeking a diploma be required to lay the foundations in the Five New Basics by taking the following curriculum during their 4 years of high school:

(a) 4 years of English;

(b) 3 years of mathematics;

(c) 3 years of science;

(d) 3 years of social studies; and

(e) one-half year of computer science.

For the college-bound, 2 years of foreign language in high school are strongly recommended in addition to those taken earlier" (op. cit., p. 24).

STANDARDS AND EXPECTATIONS

"We recommend that schools, colleges, and universities adopt more rigorous and measurable standards, and higher expectations, for academic performance and student conduct, and that 4-year colleges and universities raise their requirements for admission. This will help students do their best educationally with challenging materials in an environment that supports learning and authentic accomplishment" (op. cit., p. 27).

TIME

"We recommend that significantly more time be devoted to learning the New Basics. This will require more effective use of the existing school day, a longer school day, or a lengthened school year" (op. cit., p. 29).

TEACHING

"This recommendation consists of seven parts. Each is intended to improve the preparation of teachers or to make teaching a more rewarding and respected profession. Each of the seven stands on its own and should not be considered solely as an implementing recommendation" (op. cit., pp. 30-31).

1. "Persons preparing to teach should be required to meet high educational standards, to demonstrate an aptitude for teaching, and to demonstrate competence in an academic discipline...

2. Salaries for the teaching profession should be increased and should be professionally competitive, market-sensitive, and performance-based. Salary, promotion, tenure and retention should be tied to an effective evaluation system that includes peer review so that superior teachers can be rewarded, average ones encouraged, and poor ones either improved or terminated.

3. School boards should adopt an 11-month contract for teachers. This would ensure time for curriculum and professional development, programs for students with special needs, and a more adequate level of teacher compensation (op. cit., p. 31).

4. School boards, administrators, and teachers should cooperate to develop career ladders for teachers that distinguish among the beginning instructor, the experienced teacher, and the master teacher (ibid.).

5. Substantial nonschool personnel resources should be employed to help solve the immediate problem of the shortage of mathematics and science teachers. Qualified individuals including recent graduates with mathematics and science degrees, graduate students, and industrial and retired scientists could, with appropriate preparation, immediately begin teaching in these fields... (ibid.).

6. Incentives, such as grants and loans, should be made available to attract outstanding students to the teaching profession, particularly in those areas of critical shortage" (ibid.).

7. Master teachers should be involved in designing teacher preparation programs and in supervising teachers during their probationary years" (ibid.).

LEADERSHIP AND FISCAL SUPPORT

"We recommend that citizens across the Nation hold educators and elected officials responsible for providing the leadership necessary to achieve these reforms, and that citizens provide the fiscal support and stability required to bring about the reforms we propose" (ibid).

EXECUTIVE SUMMARY

TITLE Involvement in Learning: Realizing the Potential of American Higher Education

AUTHOR Study Group on the Conditions of Excellence in American Higher Education

DATE October 1984 .

IMPETUS FOR THE STUDY

The work done by the National Commission on Excellence in Education, in addition to stimulating reform at the elementary and secondary levels, highlighted the ways in which higher education influences other levels of education. The report also focused attention on the need for using the results of research to inform debates concerning the improvement of higher education. Specifically, the National Institute of Education wanted to know,

1) "how current knowledge about higher education could be enhanced, and

2) how the findings of research could be utilized by students, faculty, deans, college presidents, trustees, legislators, and others in their improvement efforts" (Involvement, p. ix).

To formulate the answers to these questions, a study group comprised of seven individuals, each with extensive experience in both the practice and study of higher education, was assembled.

METHOD

The study group functioned as a seminar. Reports, archives, and material from other commissions were studied; educators and researchers were consulted. Additionally, staff studies and a few commissioned papers aided the study group.

The values underpinning the discussions, analyses, conclusions and recommendations of the Study Group on the Conditions of Excellence in American Higher Education were as follows.

1. "The United States must become a nation of educated people. Its citizens should be knowledgeable, creative, and open to ideas. Above, all, they must learn how to learn so they can pursue knowledge throughout their lives and assist their children in the same quest" (op. cit., p. 2).

2. To achieve this goal higher education should provide increased opportunities for intellectual, cultural, and personal growth.

3. America must avoid wasting human potential. To that end, the college dropout rate must be reduced and access to higher education needs to be provided to Americans who are undereducated.

4. To achieve true equity, all Americans must have access to quality higher education.

5. "To assure excellence, our colleges, community colleges, and universities should establish and maintain high standards of institutional performance. These results ('or outcomes') of the educatiion offered by these institutions must be measured against their clearly and publicly articulated standards of performance" (op. cit., p. 3).

6. Diversity in the missions of the institutions, composition of the students, faculty and administrative bodies of our colleges and universities should be preserved.

7. Institutions of higher education should promote excellence without fiscal extravagance.

SPECIFIC FINDINGS

This report reviewed the scope and impact of-, growth and change in-, and warning signals of higher education. This information, along with the shared values, provides the foundation upon which the recommendations are constructed.

o The Scope and Impact of Higher Education

a. In 1984, colleges, community colleges and universities enrolled more than twelve million students, employed almost two million workers, and accounted for three percent of the GNP.

b. The twelve million students were a diverse group: more than half were women, one in every six was a member of a minority group, two out of five were over twenty-five, and fewer than three in five attended full time.

c. Three out of every five high school graduates enrolled in college.

d. Institutions have taken on many functions in response to demands for a more highly educated labor force: research, vocational training, graduate and professional education, adult basic education and remediation, continuing education, intellectual stimulation for the general public, and in some cases public service.

- Growth and Change in Higher Education:

a. During the past few decades, higher education has undergone dramatic changes. Between 1950 and 1984 enrollments increased almost 400 percent, and the number of institutions increased by nearly 60 percent.

b. Change has occurred in other areas of colleges and universities as well: the educational practices and technology, relationships between the students and the institution, between faculties and their institutions, and in the governance and organization of institutions.

- Warning signals from a number of areas--student achievement, undergraduate programs and degrees, faculty, the condition of institutions, and requirements and standards--have indicated that higher education is experiencing problems.

a. Student Achievement

1. "One out of eight highly able high school seniors does not choose to attend college" (op. cit., p. 8).

2. "Only half of the students who start college with the intention of getting a bachelors degree actually attain this goal" (op. cit., p. 9).

3. Average scores on eleven of fifteen Subject Area Tests of the GRE declined between 1964 and 1982.

b. Undergraduate Programs and Degrees

1. "Increasing numbers of undergraduates are majoring in narrow specialties..." (ibid.).

2. Between 1971 and 1982 the proportion of bachelor's degrees awarded in arts and sciences dropped from 49 percent to 36 percent. Likewise, community colleges awarded a smaller proportion of degrees in arts and sciences.

3. "...Since 1977 the proportion of entering freshmen intending to major in the physical sciences has declined by 13 percent, in humanities by 17 percent, in the social sciences by 19 percent, and in the biological sciences by fully 21 percent" (op. cit., p. 10).

4. Accreditation standards for undergraduate professional programs have often established barriers to liberal learning by requiring too many credits in the professional specialty.

c. Faculty

1. "College and university faculty have lost 20 percent of their purchasing power in the past decade..." (ibid.).

2. "The proportion of faculty who teach part-time increased from 23 percent in 1966 to 41 percent in 1980..." (op. cit., p. 11).

3. The proportion of entering freshmen

intending to pursue careers as college professors declined 89 percent between 1966 and 1982.

d. Conditions of Institutions

1. "Since 1970 the average headcount enrollment of all institutions has expanded by 25 percent" (op. cit., p. 11). The increase in size has reduced the opportunities for student involvement and contact between faculty and students.

2. As of 1984, deferred maintenance and inadequate funding had resulted in widespread deterioration of the physical plant and equipment of American colleges and universities.

3. In both the public and private sector, Education and General Revenues, as of this date, were, to a large degree, enrollment driven. This pattern of funding makes institutions vulnerable to enrollment declines and trends.

e. Requirements and Standards

1. While fourteen out of fifty state systems have raised their admission requirements and standards, they have not raised graduation requirements or standards. Increasing admission requirements, such as the years of high school study in basic academic disciplines, may have a beneficial influence on the preparation of entering freshmen. Simply raising the cutoff scores on standard tests or the required grade point average is, however, an inappropriate response.

2. Most American colleges and universities award degrees based on the accumulation of the requisite number of credits in liberal education, the major and elective, and grade point average. "...But credits do not indicate the academic worth of course content" (op. cit., p. 13).

3. A 1978 survey of 208 institutions preparing for accreditation visits revealed that only one-third had generated or examined data on student learning and growth, twenty-three percent examined students' knowledge in their major field, and fourteen percent looked at students' mental development.

RECOMMENDATIONS

The Study Group identified three requirements for achieving excellence in undergraduate education (op. cit., pp. 15-16):

1. "That institutions of higher education produce demonstrable improvements in student knowledge, capacities, skills, and attitudes between entrance and graduation;

2. That these demonstrable improvements occur within established, clearly expressed, and publicly announced and maintained standards of performance for awarding degrees based on societal and institutional definitions of college level academic learning; and

3. That these improvements are achieved efficiently, that is that they are cost-effective in the use of student and institutional resources of time, effort, and money."

Further, the study group identified three areas--student involvement, high expectations, and assessment and feedback--in which the application of existing knowledge could significantly improve the quality of undergraduate education. Twenty of the twenty-seven specific recommendations, listed below, are grouped under the aforementioned three areas; the remaining recommendations are addressed to graduate schools, external agencies and the research community.

RECOMMENDATIONS FOR INCREASING STUDENT INVOLVEMENT

(op. cit., pp. 25-36):

1. "College administrators should allocate faculty and other institutional resources toward increased service to first- and second-year undergraduates.

2. Faculty should make use of active modes of teaching and require that students take greater responsibility for their learning.

3. Learning technologies should be designed to increase, and not reduce, the amount of personal contact between students and faculty on intellectual issues.

4. All colleges should offer a systematic program of guidance and advisement that involves students from matriculation through graduation. Student affairs personnel, peer counselors, faculty, and administrators should all participate in this system on a continuing basis.

5. Every institution of higher education should strive to create learning communities, organized around specific intellectual themes or tasks.

6. Academic and student service administrators should provide adequate fiscal support, space, and recognition to existing cocurricular programs and activities for the purposes of maximizing student involvement. Every attempt should be made to include part-time and commuter students in these programs and activities.

7. Academic administrators should consolidate as many part-time teaching lines into full-time positions as possible."

RECOMMENDATIONS FOR REALIZING HIGH EXPECTATIONS

(op. cit., pp. 39-52):

8. "Faculties and chief academic officers in each institution should agree upon and disseminate a statement of the knowledge, capacities, and skills that students must develop prior to graduation.

9. All bachelor's degree recipients should have at least two full years of liberal education. In most professional fields, this will require extending undergraduate programs beyond the usual four years.

10. Liberal education requirements should be expanded and reinvigorated to ensure that (1) curricular content is directly addressed not only to subject matter but also to the development of capacities of analysis, problem solving, communication, and synthesis, and (2) students and faculty integrate knowledge from various disciplines.

11. Each institution should examine and adjust the content and delivery of the curriculum to match the knowledge, capacities, and skills it expects students to develop.

12. Community colleges, colleges, and universities should supplement the credit system with proficiency assessments both in liberal education and the student's major as a condition of awarding degrees

13. Institutions should offer remedial courses and programs when necessary but should set standards and employ instructional techniques in those programs that will enable students to perform well subsequently in college-level courses.

14. In rewarding faculty through retention, promotion, tenure, and compensation, all college officials directly responsible for personnel decisions should both define scholarship broadly and demand that faculty demonstrate that scholarship.

15. College presidents should strive to ensure that the behavior of their institution evidences the ideals of honesty, justice, freedom, equality, generosity, and respect for others--the necessary values of community."

RECOMMENDATIONS FOR ASSESSMENT AND PROVIDING FEEDBACK

(op. cit., pp. 55-61):

16. "Faculty and academic deans should design and implement a systematic program to assess the knowledge, capacities, and skills developed in students by academic and cocurricular programs.

17. In changing current systems of assessment, academic administrators and faculty should ensure that the instruments and methods used are appropriate for (1) the knowledge, capacities, and skills addressed (2) the stated objectives of undergraduate education at their institutions.

18. Faculty should participate in the development, adoption, administration, and scoring of the instruments and procedures used in student assessment and, in the process, be trained in the ways of using assessment as a teaching tool.

19. College officials directly responsible for faculty personnel decisions should increase the weight given to teaching in the processes of hiring, and determining retention, tenure, promotion, and compensation, and should improve means of assessing teaching effectiveness.

20. Student evaluations of academic programs and the learning environment should be conducted regularly. The results should be widely disseminated as a basis for strengthening the quality of undergraduate baccalaureate education."

RECOMMENDATIONS TO GRADUATE SCHOOLS

(op. cit., pp. 64-65):

21. "To balance the specialization of graduate training in the disciplines, graduate departments should require applicants for admission to

present evidence of a broad undergraduate liberal arts education.

22. Graduate deans and department chairs should develop ways of helping prospective faculty in all disciplines (1) to learn about the history, organization, and culture of American higher education and (2) to develop their understanding of teaching and learning."

RECOMMENDATIONS TO EXTERNAL AGENCIES

(op. cit., 67-71):

23. "State and system-level officials should minimize the intrusions of administrative and fiscal agencies into the daily and routine operations of public colleges, community colleges, and universities.

24. Accrediting agencies should hold colleges, community colleges, and universities accountable for clear statements of expectations for student learning, appropriate assessment programs to determine whether those expectations are being met, and systematic efforts to improve learning as a result of those assessments.

25. State officials should establish special and alternative funding for both public and private institutions to encourage efforts that promote student involvement and institutional assessment.

26. State legislators and boards of trustees should reverse the decline in faculty purchasing power by increasing faculty salaries at a rate greater than inflation."

RECOMMENDATION TO THE RESEARCH COMMUNITY

(op. cit., p. 74):

27. "Federal and state agencies, private foundations, colleges and universities, research organizations and researchers concerned with high education should focus their funding strategies and research activities on how to facilitate greater student learning and development."

UNDERGRADUATE LITERACY PROGRAMS AT ARIZONA UNIVERSITIES

KATHLEEN CHURCH

INTRODUCTION

During the last quarter century, an information explosion has occurred in many disciplines that traditionally comprise an undergraduate education. Derek Bok, in his 1986 treatise, Higher Learning stated it well: "More new biomedical knowledge has accumulated since the discovery of the structure of DNA in 1960 {more accurately, 1953} than in all of the previous generations. More books have been published since World War II than in all the preceding centuries." The information explosion has generated, and continues to generate polemic discussions about what and how much should be included in curriculum of the undergraduate student. Concurrent with the information explosion, opportunities to participate in higher education have been extended to a less homogeneous spectrum of students, and the overall basic skills level of students entering the universities has declined. The combination of these factors has created a dilemma for higher education. While the information explosion requires an expanded, and in many scientific disciplines a more resource intensive curriculum, more and more resources have had to be diverted from traditional disciplines into programs teaching skills that in the past had been mastered by almost all high school graduates who had chosen to pursue higher education.

While one can offer cogent arguments about why universities ought not to divert resources into remediation, and many legislators and policy makers have offered such arguments, the fact remains that most institutions of higher education have recognized that expecting the K-12 educational system to succeed with all its graduates is futile. Much discussion about improving K-12 has occurred but little change has been brought about by the discussion. Nowhere has this point been demonstrated so clearly as in the state of New Jersey.

A decade ago the New Jersey Board of Higher Education made the commitment to confront the issue of basic skills performance of high school graduates. Its mandate called for

1. basic skills testing of all Freshmen entering public colleges and universities, and

2. the evaluation of remedial programs at each institution.

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A Basic Skills Council, working under contract with the Educational Testing Service, created its own criterion-referenced test, the New Jersey College Basic Skills Placement Test. The test has now been used to place over 500,000 students at 30 public colleges and 11 private institutions in the state. Unfortunately, the test results have remained constant over the 10 year period. The percentage of students entering higher education without the requisite basic skills has not diminished. The most recent data (Fall, 1986) indicate that 33% of the students lack proficiency in verbal skills, 47% in computation, and 60% in elementary algebra. It can be argued that the most important basic skill that an individual must possess to function in today's complex society is facility with the spoken and written word.

The importance placed on writing skills by the citizens of Arizona can be inferred from the results of a recent opinion poll concerning Arizona Public Education conducted by Arizona State University. Approximately eighty percent of those polled perceived that not enough emphasis was placed on writing skills in the public schools. Task Force Staff discussions with employers of graduates of Arizona's universities revealed that while employers appreciated the excellent technical training of these graduates, they had difficulty in recruiting adequately literate college graduates. A concern frequently expressed to the Staff by faculty from all three universities was their frustration in coping with writing deficiencies among the students. Indeed it has been acknowledged nationally that literacy is THE central problem of undergraduate education in America.

THEORETICAL PRINCIPLES FOR EXCELLENT LITERACY PROGRAMS

Excellent literacy programs must be built upon solid theoretical foundations. The Directors of Composition at Arizona's universities offer the following six principles as critical to excellent literacy education:

1. The acquisition of literacy is an ongoing process. Literacy is never really mastered but continues to develop along with increasingly difficult academic challenges students meet as they mature and their education progresses.

2. Developing the ability to write is critical to the development of higher order thinking ability in all academic areas.

3. The context in which students are expected to write determines the level of challenge to their thinking and writing competence.

4. An excellent writing program recognizes that writing instructors should be trained to teach writing and should be knowledgeable about contemporary research and theory in the teaching of writing.

5. Excellent contemporary writing programs have rejected "skills" approaches and have adopted a variety of alternatives that have in common their focus on the processes that lead up to the written product, an emphasis on revision and editing, and a reintegration of reading, writing, listening, and thinking.

Arizona's universities are currently addressing the problems of literacy in diverse ways. However, literacy programs have not received priority in funding commensurate with their importance to a quality education for undergraduate students. University writing requirements and the means of satisfying them cut across departmental and disciplinary lines. Freshman writing at all three institutions is a University requirement, even though it is taught by the English department. Departments and Colleges that house composition programs probably ought not to be required to shoulder the entire financial burden for writing instruction.

COMPOSITION PROGRAMS AT ARIZONA'S UNIVERSITIES

FRESHMAN COMPOSITION

UNIVERSITY OF ARIZONA

Of the three Arizona universities, the University of Arizona offers the most integrated and comprehensive composition program. The program is multifaceted and involves several levels of competency, the first being Freshman Composition. Students are placed on the basis of their performance on a written, holistically graded placement essay administered at the time of first registration and their performance on the English section of the American College Test (ACT), the Test of Standard Written English or the Scholastic Aptitude Test (SAT). A student who is diagnosed as having deficiencies in writing ability must complete three semesters of Freshman English rather than two. Currently, approximately one-third of the freshmen students entering the university are placed in English 100, the developmental writing course, and university credit is awarded upon completion of the course. A student must pass the course to progress in the Freshman Composition sequence. Interestingly, the proportion of students requiring the developmental course did not change with the 1987-88 entering freshmen even though that group represents the first cohort admitted under new and more stringent high school curricular requirements. The latter observation is somewhat surprising although perhaps not a fair assessment of the impact of the new admission requirements. The written placement examination used by the University is not a normed examination. A possible problem with holistically graded essays is that the criteria for passing may change from year to year depending on the cohort of individuals who act as readers of the essays.

All students, other than those placed into the developmental course, must complete two semesters of Freshman English. Students with advanced writing abilities are served by a special two semester sequence. Freshman Composition courses are taught exclusively by faculty associates and graduate assistants at UA.

ARIZONA STATE UNIVERSITY

At Arizona State University, students are placed into appropriate courses according to their scores on the SAT Verbal or the ACT English tests. Most students satisfy the University's First-Year Composition requirement by successfully completing English 101 and English 102 or its equivalent addressing the special needs of non-native speakers. Students who earn appropriately high standardized test scores may meet the University First-Year Composition requirement by taking English 105, a concentrated advanced course. The few students who earn scores of 4 or 5 on the Advanced Placement Test in English are exempted from First-year Composition at ASU.

Students in all composition courses may seek individual tutorials through the Writing Center. All sections of First-Year composition courses, with rare exceptions, are taught by graduate assistants and faculty associates. Although the National Council of Teachers of English recommend that composition classes have not more that 20 students, the class size for First-Year Composition courses is set at 27.

Until the fall of 1986, ASU had made no provision for students admitted to the university but unprepared to meet the demands of English 101. ASU adopted the posture that "remediation is not an appropriate function of the university. " Instead, to address the need for a developmental writing course, the ASU administration proposed that a course from the Maricopa County Community College District course inventory, English 071 Review of English Fundamentals, be offered on the ASU campus by community college faculty. The parallel is the developmental writing course (English 100) offered at UA, but the community college option was selected as more economical in spite of the protests of the ASU English Department, especially the rhetoric and composition specialists. A small pilot project was run in the fall of 1986. In the fall of 1987, all students who had low scores on the ACT English (16 or lower) or the SAT verbal (380) or lower were required to take and pass English 071 before enrolling in English 101. The course is designed and taught by faculty from South Mountain Community College and does not carry university credit. Approximately 500 students--15% of incoming freshmen--placed into English 071 in the fall of 1987, and one study conducted that semester indicated that additional 500 students who placed into English 101 were not prepared for the rigors of that course. The Director of Composition and staff are currently seeking funds to develop procedures for placing students more accurately. The Director is also working with faculty from South Mountain Community College to develop an English 071 syllabus coordinated with the entrance proficiencies for English 101.

NORTHERN ARIZONA UNIVERSITY

The composition program at NAU occupies a key position in the undergraduate curriculum. Most students are required to take two writing courses in their first year at the University: English 101 and 102. Exceptions to this requirement include a) students placed in the honors program who may fulfill their composition requirement with a single course, English 197, b) students who have taken advanced placement in high school and c) students who have taken the standardized CLEP examination and have achieved an appropriately high score. Like ASU, Northern Arizona University students requiring developmental work are now (beginning Fall 1985) required to complete an appropriate basic writing course offered by Yavapai Community College on the NAU campus. Unlike ASU, students completing the developmental course are retested prior to their placement in English Composition. Students are placed in the developmental course, English 101 or English 197-Honors on the basis of a placement examination administered to virtually all students entering the university. Students are given one hour to write on a topic supplied by the English Department. These essays are holistically scored by a team of trained readers from the English Department. Students in the developmental course who receive less than a grade of B must retake the placement examination prior to registration for English Composition. The most recent results demonstrated that of the 100 students who completed the developmental course, 67 showed enough improvement to enter the English Composition sequence.

For this coming year, approximately 10% of the sections of English 101 and English 102 are taught by tenured or tenure track faculty. The remainder of the sections are taught by part-time faculty and graduate assistants. The graduate assistants are under the supervision of the Director of Composition. The graduate assistants are also required to participate in an intensive training program consisting of a week-long summer workshop, a monitoring system with full-time faculty, weekly staff meetings and a graduate level course in composition theory. The TAs teach from a standardized syllabus. Class sizes are limited to 25 students.

As a result of a Ford Foundation Grant recently received by the English Department, a pilot program will be implemented Fall semester, 1988, that is expected to address more effectively the needs of NAU's minority students. The pilot will consist of "intensified" sections of English 101 that will carry 6 credit hours (rather than 3), and will have a ceiling on student enrollment at 12. The pilot is based upon the highly successful basic reading/writing program at the University of Pittsburgh.

GENERAL OBSERVATIONS ABOUT THE FRESHMAN COMPOSITION PROGRAMS

An examination of Freshman Composition programs at the three Arizona universities demonstrates that different approaches are being used to address problems of literacy. For example, different placement criteria are used and significantly different numbers of students are deemed to be in need of developmental basic writing instruction. While a complete analysis of resource utilization was not undertaken, it is clear that major differences exist. NAU utilizes tenured or tenure-track faculty for instruction in many English Composition sections while teaching assistants and faculty associates are utilized at the larger universities. UA compensates faculty associates and teaching assistants at significantly higher rates than does ASU. ASU and UA compensate graduate teaching assistants at a higher rate than does NAU. The use of community colleges for developmental progams by NAU and ASU is cheaper than integrating basic writing into the university curriculum as is the more common practice in American universities and the path chosen by UA. Furthermore, due to the different placement criteria, UA requires 3 semester of freshman English for a greater proportion of students than do ASU or NAU. In addition UA requires a minimum of 2 semesters of Freshman English for all students while only one semester is required of advanced placement students and honors students at ASU and NAU respectively. Finally UA and NAU uses a more expensive method for placement than ASU which relies on an examination already paid for by the student.

Although the universities differ in their general approach to the development of literacy skills during the freshman year, until recently there has been, little effort to assess the success of developmental efforts or the freshman composition programs in general. This is primarily because student information systems

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were either not in place or not easily accessible to individuals involved in the programs. Based on resource investment into the programs, UA and NAU are the clear leaders. If one defines quality by process, at least one outside consultant has agreed that the program at UA is among the best in the nation. Nevertheless, in the absence of outcome measures, the cost effectiveness of the program remains in question.

Most experts in rhetoric and composition now agree that because of the deficient writing skills of many entering freshmen, basic writing must have an established place in the university curriculum. Additionally, the university itself should offer the course as part of its first year composition program. The fact that ASU and NAU administration have the community colleges provide basic writing instruction represents a departure from the path chosen by most major universities. Indeed the action might be described as an interesting experiment, whose detractors would include almost everyone connected with university basic writing pedagogy. The results of the experiment should be carefully monitored if the detractors are ever to be silenced. Proven developmental programs must be available if the universities are to attract and retain minority students. Currently, ASU is undertaking a systematic study of the impact of the developmental course furnished by South Mountain Community College. The results of the study will be available some time next year.

Even if the developmental courses at ASU and NAU are having a positive impact on the writing skills of those who participate, there are many philosophical reasons to oppose the arrangements which should be considered. For example, is it right to admit students to the university, accept their money and refuse to commit university resources to meeting their educational needs? Many would argue that it is poor educational practice to stigmatize developmental writing students by placing them in a non-credit course taught by someone else's faculty.

The effectiveness of developmental programs is beginning to be questioned nationwide; at least two states are investing resources to assess effectiveness on a state-wide basis. New Jersey's program is well established, whereas Texas is in the process of implementing such a program. Follow-up studies on the effectiveness of developmental programs in New Jersey have demonstrated that the university two-year survival rate for students in need of help and who complete the developmental program is double that of those who need the help but do not receive it. Furthermore, the survival rate of the former is not significantly different from those students who were not in need of developmental help. The point to be taken is that there are successful developmental programs.

DEVELOPMENTAL PROGRAMS AND EDUCATIONALLY DISADVANTAGED MINORITIES

Nationally, developmental basic writing courses are populated disproportionately by educationally disadvantaged minorities. Although information concerning the Arizona universities is difficult to obtain, we do know that at NAU, more than 60% of those enrolled in the fall 1985 developmental basic writing course were minority students. It has been demonstrated many times that higher retention rates of educationally

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disadvantaged students can be achieved. For example, UA has developed two especially successful programs for disadvantaged undergraduate students. The Writing Skills Improvement Program and the Summer Institute for Writing and Thinking Across the Curriculum have been demonstrated to be very successful. Graduation rates for students involved in the Writing Skills Improvement program were at least 27% higher than for a comparable group not involved in the program (Gonzales et al., 1986). At ASU, tutors are available at the Writing Center. Of the 637 students served during Fall, 1987, 30% were minority students. Of those being tutored, 54% showed an increase in their final grade compared with their pretutoring grade. Unfortunately, the number of students involved in these intensely personalized programs is small in comparison to those in need. For example, at ASU, the Writing Center -- for lack of both space and staff--had to turn away four out of five students seeking assistance. Through a matching grant from Apple Corporation, the Writing Center has, however, recently acquired 22 Macintosh computers which will soon be available to students for word processing and computer aided instruction. While other programs are available for personalized assistance (for example, the Learning Assistance Center at NAU), it is difficult to evaluate the programs because accountability studies have not been undertaken or the information could not be located by the Task Force Staff.

UPPER DIVISION COMPOSITION PROGRAMS

UPPER DIVISION WRITING PROFICIENCY EXAMINATION

The upper division writing program at UA was originally conceived by the Intercollegiate Writing Committee of the Academic Senate. Implementation of the program has been the responsibility of the University Composition Board (UCB). Financing of the UCB has, until recently, come from local funds. However, in 1986, through a successful decision package, the UCB is now state funded. Beginning in 1985, as part of the upper division writing program, UA introduced an Upper Division Writing Proficiency Examination (UDWPE). All students must take the examination after completing 40 hours of credit but before receiving 75 hours of credit. Students who do not perform satisfactorily cannot register for required upper division writing intensive courses until they complete further developmental work. A new, one-unit, five week long writing-intensive workshop, English 397, was instituted in Fall of 1986 as one option for completion of the developmental work. Colleges or departments in which a student majors may offer alternatives. The number of sections of English 397 has grown from 19 in 1986-87 to approximately 50 in 1987-88.

During 1986-87, 4992 students sat for the proficiency examination. Of these, 30% had unsatisfactory performance on this holistically graded examination. Thirty-four percent of transfer students performed unsatisfactorily while only 24% of the native UA students were deemed deficient in writing skills. Without appropriate controls in the data analysis, it is impossible to determine whether the superior performance is a result of more talented students opting for the university initially or whether the university's lower division composition programs have had a positive impact on writing ability. According to one outside consultant, UA is the only major public Research I university of which he was aware, to have initiated an upper division writing proficiency examination for all students. ASU requires that students who receive a "D" in any First-Year Composition course successfully complete a written English proficiency Examination. A student who does not complete the examination successfully on the first try must enroll in an English course prescribed by the director of Freshman English. NAU does not require a writing proficiency examination.

Some states have mandated that upper division ("junior rising") examinations be administered to all students prior to initiating upper-division work. In Florida the examination (College Level Proficiency Examination) covers all basic skills (reading, language and mathematics) while in other states, the emphasis has been on reading and writing (for example, the Georgia Regents Examination). Many states (including Arizona) have instituted policies requiring the assessment of all basic skills prior to entry into teacher training. The goals for such assessment programs are varied. The most extreme use of such examinations is as a "gateway" to upper-division work. Students must pass the examination prior to progressing to the junior level. Those who do not, must exit the university.

The Task Force staff does not believe that standardized examinations should be used as a "gateway" in the Arizona institutions. Although well designed testing programs may provide useful comparative data in the aggregate, the companies which construct and market examinations caution against the use of standardized tests as the sole measure of an individual student's abilities. In our view, there is no substitute for the collective judgment of classroom instructors over two years of college work by the student. The use of one or two test scores as the sole determinant of an individual student's future may well lead to a large number of judgments which are inaccurate and unfair to many individuals.

While the use of "junior rising" examinations as a gateway to the junior year may not be in the best interest of the Arizona universities, such examinations do offer opportunities which, in the long run, may benefit the institutions and the students. Such examinations can be used for institutional self- evaluation and can establish a data base for rational decision- making for program improvement, especially in lower division composition programs. All three institutions accept a substantial proportion of the student body as transfer students and the freshman composition programs in which they have participated, may differ from one another in significant ways. This reality complicates the "normative" value of testing all students who have been exposed to different programs. The skill level of the students can be expected to be uneven. However, the examinations, when combined with more traditional forms of assessment, could identify students with deficiencies to be corrected prior to the completion of the undergraduate experience.

WRITING INTENSIVE COURSES AND WRITING ACROSS THE CURRICULUM

A student's writing ability will decline if the proficiency he/she develops in freshman English is not regularly challenged in required writing in subsequent courses (Kitzhaber, 1963). All three universities have recently established criteria for upper-division courses to be declared "writing intensive" and such courses are required of all students prior to graduation. Arizona State University has recently initiated a general studies core of courses which all undergraduates must complete. Writing intensive courses are a major requirement of the literacy component of the core. At least one outside consultant has commented that the new general studies core at ASU is one of the more rigorous that he has encountered. To be designated writing intensive (critical writing at ASU) the course must have advanced writing assignments in a specialized discipline. The courses are monitored by specific university faculty committees. NAU students must complete 14 courses that stress writing in order to graduate. Formal "writing across the curriculum" programs are also being initiated in Arizona universities. Such programs are increasing nationally and to be effective, it is recognized that they must have a strong faculty development component. Faculty from disciplines other than rhetoric and composition often have neither the skills nor the inclination to mentor students in the more salient components of critical writing. Recently, NAU and the ASU College of Liberal Arts and Sciences (CLAS) have received grants from the Ford Foundation to introduce formal "writing across the curriculum" concepts. With those funds, pilot programs have been initiated aimed at developing the appropriate skills in faculty from all disciplines within the college. The ASU, CLAS dissemination model may serve as a model for other colleges within the University or for that matter, other universities within the state. In our view the preferred alternative to upper division writing proficiency examinations is a curriculum in which students are expected to be able to write and in which students clearly understand that writing is as natural a part of course work as reading or laboratory observation. Such a curriculum not only checks the students' writing ability but, more importantly, continues what First-Year Composition started by contributing to the further development and sophistication of writing ability.

CONCLUSIONS

1. The level of resources devoted to the University of Arizona literacy programs is envied by rhetoric and composition faculties at the other universities. There has been no systematic attempt to assess the impact of the developmental writing course. The new student information services will make such assessments possible. The Upper-Division Writing Proficiency Examination assesses the writing skills of all students prior to upper-division work. However, the use of non-normed, holistically graded examinations for placement and for the upper-division examination does not allow assessment of the value added by the freshman composition program.

2. Currently, only UA has a comprehensive freshman writing program. ASU and NAU, for economical reasons, have isolated basic writers in non-credit courses offered on campus by local

community colleges. These courses, although required by the universities, are unconnected with their freshman writing programs. While the universities are developing procedures for assessing the impact of the developmental courses, it is too soon to evaluate the situation realistically.

3. ASU is using a crude, low cost system to determine which courses students should enroll in. ASU's freshman composition program is the least resource-intensive among the three univer-sities. The literacy programs at ASU, and perhaps to a lesser extent at NAU, have not received resources in keeping with the importance of their functions and the number of students served.

4. All three universities are in the process of developing rigorous, upper-division writing requirements for all students. Formal "writing across the curriculum" programs are being implemented at all three universities.

RECOMMENDATIONS

- Each university should develop improved procedures to assess placement in and/or the impact of developmental programs for students who do not possess the literacy skills to meet the rigors of freshman composition. This assessment is especially important for ASU and NAU. The community college experiment should be evaluated within the next two years and action taken to correct the situation if the desired results are not forthcoming.

- A comprehensive review of the resources devoted to literacy programs at the three universities should be undertaken and deficiencies should be removed in the near future.

- An inventory of all special programs designed to increase the basic skill level of educationally disadvantaged students should be undertaken and the programs evaluated. Demonstrably successful programs should be expanded and the resources for expansion should be made available and institutionalized.

- Incentives should be developed to encourage an increasing number of faculty to participate in coherent and intensive "writing across the curriculum" programs.

- The size of college composition classes should be reduced to the number recommended by the National Council of Teachers of English.

- Establish at all three universities a solid core staff of full-time lecturers or academic specialists with interest, training and experience in the teaching of writing to help oversee temporary faculty and GTAs.

- Find methods of funding literacy education that reflect its cross-disciplinary nature.

AN EVALUATION OF THE DECENNIAL REVIEW PROCESS

ROBERT BARAK
and
THE TASK FORCE STAFF

INTRODUCTION

"A program review is a formal and systematic process that examines programs periodically over time, checks for changes, and matches program characteristics with ongoing program needs" (Ewell, 1983). During the last decade, program review has become an important part of the planning process in higher education. About one-third of all institutions of higher education now have formal program review. More than half of these have been developed since 1977 (Ewell, 1983). Given these facts, it appears that the Arizona Board of Regents (ABOR) was a pioneer in this effort. Since 1975, ABOR has had a policy requiring all academic departments located in Arizona universities to undergo a substantial review process every 10 years. The policy has undergone periodic revision and is outlined in a series of policy statements:

1. The process of academic program review should be primarily internal to the university, should produce judgments regarding disciplines by colleagues, and should include an assessment of the performance and achievements of students and of the contributions of the discipline to other campus units.

2. Four to eight academic departments should be reviewed each year, with the objective of a complete review of all departments over a ten-year period.

3. An initial review (self-study) will be undertaken by faculty and administrators within each discipline. Undergraduate and graduate disciplines will also be reviewed by colleagues or administrators from outside the discipline, but within the university. Undergraduate disciplines may also be reviewed by external consultants. Graduate disciplines will be reviewed by external consultants.

4. Although departments are the basic unit for review, it is expected than some programs and curricula will be reviewed at the college level.

5. Budgetary needs for academic program reviews will be met by existing budgets of the universities.

6. Reviews will cover the areas of academic degree programs, faculty, students, physical facilities, costs, other resources and production.

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7. Summary reports will be submitted to the chair of the Academic Affairs Committee by the involved university administrator and the Regent's staff.
8. The Academic Affairs Council may make recommendations to the university presenting the academic program review. All proposals for academic program or curriculum changes resulting from the reviews will be subject to the same approval procedures required for other proposals for changes.

(Chapter II, Sec. 2-208, Board of Regents Policy Manual)

Most would agree that the three characteristics of a robust program review are 1) they should occur on a regular schedule 2) they should be conducted in a systematic fashion and 3) they should be comprehensive. Where the policies outlined by the Board are followed, robust reviews result. However, if all program reviews are to become serious ingredients in the planning process, the review process must avoid common pitfalls. Those pitfalls might include 1) problems with use of data, 2) problems in the conduct of the reviews, and 3) problems that have to do with whether or not the review results are used and how they are used.

The Task Force staff undertook a review of the process for periodic program review with the aid of a consultant, Dr. Robert Barak, Associate Director, Iowa Board of Regents, a specialist in academic program reviews. Dr. Barak spent a total of four days on site visits to the ABOR office and to the institutions. The recommendations to be presented represent the combined efforts of Dr. Barak and the Task Force staff. They were formulated following an examination of written policy statements, guidelines, self studies, consultant reports and summary reports to the Board of Regents, in addition to discussions with ABOR staff, representatives of academic vice presidents, deans, departmental chairs and faculty at the three institutions.

The current review process has many strengths including an excellent potential for strengthening academic programs, removing marginal or nonessential programs and increasing accountability to higher education constituencies. The review process is currently undergoing major revisions on all campuses with these goals in mind. However, if the goals are to be realized, there are certain shortcomings that need to be addressed. It is recognized that some of the recommendations which follow have already been implemented by some units. Nevertheless, the effectiveness of the process is uneven throughout the state.

RECOMMENDATIONS

- A statement of the goals and objectives of the academic program review effort should be incorporated into Board of Regents policy so that the Board's expectations for this effort are clear. The statement should emphasize the value of program review to the institution and to the department conducting the review.

Rationale:

The recommendation addresses the need for immediate, recognizable benefits at the institutional level and for greater incentives for full, conscientious involvement in the reviews. It should be emphasized that the reviews are done to promote program improvement, assure maximum use of current resources and provide a basis for university planning. The purpose of the reviews appears to be unknown to many faculty, departmental level administrators, and deans. While some units and deans have used the information provided by the review process very effectively, the reviews are often viewed as an unnecessary burden placed on the institutions by the Board of Regents rather than as a means for program improvement.

Responsibility: Board of Regents

- Intervals between reviews should be reduced from ten years to a shorter period of from five to seven years.

Rationale:

Ten years is a very long time between reviews of program quality. Good programs have been known to deteriorate in just a few years, while others may emerge and not be fully recognized. The national average for periodic program reviews is five to six years.

Responsibility: Board of Regents

- Various internal and external review efforts should be integrated in order to reduce the overall burden on faculty and departmental administrators and to improve the chances of periodic program reviews being utilized. Accreditation reports normally should not be used as a substitute for periodic program reviews unless they meet all criteria for the review.

Rationale:

In some cases, institutions have been substituting accreditation reviews for the decennial review efforts. In other cases (for example, some programs at the medical school) units have escaped review altogether. There are some substantive differences between program reviews conducted by institutions and accreditation reviews conducted by outside special interest organizations. Most accreditation groups rarely address the issue of whether a program is needed in the first place, whereas an institutional review ought to consider this issue for each program area. In addition, some accreditation organizations do an excellent job of preparing site-visits, developing quality indicators and conducting the total accreditation review, while others are frequently found wanting. Because of quality differences in external accreditation processes, efforts should be made to ensure that external accreditation reviews meet all guidelines of internal program review as well as those required for the accreditation process if the review is to be substituted for the internal periodic program review.

Responsibility: Board of Regents and universities

- The Board of Regents should more closely monitor reviews to ensure that they are responsive to the stated requirements of their review policy.

Rationale:

The summary reports now submitted to the Board of Regents do not reflect the actual review process and contain little or no useful information for decision making. They should be discontinued in favor of an assessment of each review by the Board of Regents staff. Staff reports to the Academic Affairs Council should accurately reflect the content of the reviews and the follow-up efforts required for recommendations and concerns.

The Board of Regents and the universities should clearly define data to be included in the review process and develop standardized reporting methods. For example, current Regents' policy states that the reviews "should include an assessment of the performance and achievement of students." Assessment is uneven and, under most circumstances, self serving to the program under review. Consideration should be given to the development of standardized survey instruments with surveys being conducted by experienced individuals outside of the program under evaluation.

Responsibility: Board of Regents and universities

- Each university should develop procedures and guidelines for meaningful program review. Board staff should periodically monitor the institutions to ensure that procedures and guidelines are in place and being used.

Rationale:

There appears to be a lack of familiarity with institutional guidelines by some deans, departmental chairs and faculty. Because program review processes are currently undergoing revision, the guidelines are frequently "drafts" with insufficient specificity to lead to consistent, comprehensive review of programs. As a result, considerable time is spent collecting information that is of little use in determining program quality.

Responsibility: Universities

- Policies and procedures for the reviews should emphasize a primary focus on program improvement and , a secondary focus on resource requests. The recommendations contained in the reviews should be used as a starting point for the next periodic review.

Rationale:

Content of the reviews are overly focused on resource acquisition at the expense of an analysis of program improvement. Almost all note the need for more faculty, higher salaries, more/better equipment and facilities. Reviews seem to be viewed only as opportunities to seek incremental resource increases. While this can and should be a part of the self-study where appropriate, resource acquisition should not be the overriding goal.

In some instances, problems identified in the reviews, such as the lack of resources, are not addressed creatively because of inflexibility created by the perception (correct or incorrect) that more students mean more dollars. For example, some units will not propose to cap enrollments in order to reduce faculty workloads because it is perceived that support dollars are tied to the number of students enrolled. The guidelines should ask departments to review the program and suggest improvements given existing resources and faculty lines to achieve optimum quality.

Responsibility: Universities

- Procedures for the use of consultants should include greater objectivity in their selection. On-site visits and exit interviews with department chairs and deans should be mandatory.

Rationale:

Some aspects of existing guidelines impair review objectivity. For example, outside consultants are often picked exclusively from lists submitted by the department under review. In some instances, the outside consultants never visit the campus but merely respond to a written self-study prepared by the department. This results in an under-utilization of the consultants, a reduction in the objectivity of the reviews, and the loss of an opportunity to receive observations for program improvement which are often provided during a frank, confidential exit interview with key administrators.

The possible inclusion of a "generalist" consultant,a non-peer to the department but knowledgeable about administration of reviews should be considered. Consideration should also be given to providing consultants with information on where a department under review fits into the overall mission and goals of the university and the college. This may help overcome the problem of consultants developing unrealistic recommendations for a given unit.

Responsibility: Universities and departments

- Procedures for the reviews should encourage active participation of department faculty. Each member should have the opportunity to review the completed self-study, consultant reports, and institutional oversight committee reports.

Rationale:

In some instances, faculty in a department being reviewed do not actively participate in the reviews and do not have an opportunity to see, much less discuss the review results.

Responsibility: Universities and departments

- Undergraduate and graduate programs should be given equal emphasis in the periodic program review. Restructuring of university oversight committees and a change in ABOR policy statement number 3 may be required to ensure than this occurs.

Rationale:

Undergraduate programs are sometimes ignored and are often superficially covered. In some cases this is true of both the self-studies and the consultant reports.This may be a result of the graduate level emphasis of the reviews, for in some instances the reviews are conducted under the general supervision of the graduate dean. ABOR policy statement number 3 can also be interpreted as emphasizing graduate rather than undergraduate programs.

Responsibility: Universities and departments

- The reviews should be used by department chairs, deans and vice presidents for planning and resource allocation.

Rationale:

While some periodic reviews represent some of the most extensive and best compilation of information on programs, they appear to be used infrequently outside the department for planning and budgeting purposes. Follow-up on recommendations by the dean and vice presidential levels appears to be rare. Schedules of reviews need to mesh effectively with other elements of university strategic decision-making cycles for planning and budgeting.

Responsibility: Universities

- Financial, data gathering and analysis, and clerical assistance should be provided to departments undergoing reviews.

Rationale:

A comprehensive, effective, program review is a strain on a departmental operating budget. Financial incentives must be created to encourage departments to undertake certain activities to improve the quality of the review. For example, meaningful surveys are not inexpensive. For some units, the expense of such surveys would decimate the operations budget. Often departmental expertise is lacking for conducting surveys and interpreting the data.

Responsibility: Board or Regents and universities

UNDERGRADUATE ASSESSMENT EFFORTS IN ARIZONA'S UNIVERSITIES: A STATUS REPORT TO THE TASK FORCE ON EXCELLENCE, EFFICIENCY AND COMPETITIVENESS

PETER T. EWELL

In March, 1988, the Task Force on Excellence, Efficiency, and Competitiveness (EEC) of the Arizona Board of Regents contracted with the National Center for Higher Education Management Systems (NCHEMS) to visit Arizona's three four-year public universities, and observe the status of institutional efforts to assess the quality of undergraduate education. This report documents the results of these visits. There were several reasons for the Task Force's interest in this topic. First, institutions had been requested by the Board to prepare multidimensional assessment plans as part of an overall "Plan for Improving Undergraduate Education" for 1987-88; institutional plans must be submitted to the Board by May 1, 1988. More importantly, the Task Force was interested in exploring a range of mechanisms designed to improve the effectiveness of undergraduate education, and assessment has been much discussed as a potential lever for improvement.

Both reasons suggested that the Task Force take a serious look at the status of undergraduate assessment at the institutional level to determine both the prognosis for assessment initiatives currently under way, and to determine if assessment constituted a viable, cost- effective means to improve undergraduate instruction.

NCHEMS consultants visited the three campuses during two weeks in March of 1988. Two days each were spent at the University of Arizona (UA) and Arizona State University (ASU), and one day was spent at Northern Arizona University (NAU). In advance of the visit, consultants conferred with institutional representatives by telephone, and reviewed a range of documents provided by the institutions--including drafts of the assessment plans being prepared for submission to the Board. Other documents reviewed prior to or during the visits included curriculum plans, placement tests, existing and proposed student surveys, course evaluation forms, and procedures for departmental or program review. During the visits, interviews were conducted with a variety of individuals. Minimally, however, they included sessions with the faculty/administrative committee charged with planning the assessment effort, with those responsible for institutional data collection such as institutional or student affairs research personnel, with a sample of Deans, and

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with academic affairs staff (See Appendix A for an interview schedule for each campus visit). Each visit also included a session with a top administrator--either the President or Chief Academic Officer.

Visits were intended not only to gather but also to give information. As a result, NCHEMS staff approached these visits as they would a standard consulting assignment: a primary responsibility was to provide advice to each campus about how their efforts might be improved. Consistent with this philosophy, NCHEMS provided each campus with a consulting report presenting a range of observations about their efforts and some suggestions for further direction. As per agreement with the Task Force, these reports were sent directly to the campuses and were intended solely for their use in implementing a better program. We believe that this feature of the visits directly benefited the campuses and also helped ensure the overall success of the project in gathering accurate information about the status of campus plans.

The bulk of this report will present our observations about the status of assessment activities at the campus level. Rather than reporting on each institution separately, we will discuss their individual situations in terms of a set of generic headings that attempt to describe the status of assessment efforts statewide. Given these observations, we will conclude the report with a brief set of policy recommendations for further consideration by the Task Force.

OBSERVATIONS

We present our observations in this section on the basis of four major dimensions. The first, Administrative Support, Leadership and Commitment will address the overall administrative climate for the effort at each of the three campuses. Discussion will consider the general attitude of top leadership toward assessment and their perceived willingness to back it up with appropriate resources and organizational support. A second section, Information Resources and Infrastructure will address the extent and adequacy of management information at each institution--a critical foundation upon which any assessment program must rest. A third, Organization of Assessment will explicitly discuss the scope and structure of institutional assessment plans, including a general review of the strengths and weaknesses of each. A fourth section, Implementation Status and Prognosis will address the degree to which these plans have been fulfilled to date, including committee structures, organizational development, and actual data collection, and will indicate how we expect these plans to progress in the coming year.

- Administrative Support, Leadership, and Commitment:

Common sense and past experience alike indicate the importance of top administrative support for an initiative such as assessment. Not only does such an initiative need sufficient resources to be successful, but it also implies a substantial change in institutional culture. In essence, successful assessment depends upon the institution being willing to act on concrete information to address deficiencies. In addition to providing the necessary resources to accomplish required data collection, this implies

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that top leadership be both "information conscious" and be able to demonstrably link decisions taken to a concrete body of evidence. Lacking these ingredients of support, comprehensive institutional assessment efforts are rarely successful.

In general, the situation at the three Arizona four-year campuses is adequate on this dimension. Despite the fact that the stimulus for assessment is external--a Board of Regents mandate for action--academic leadership at all three institutions understands that it is possible to proceed in a fashion consistent with institutional mission. None of the institutions is developing plans in a "cookbook" fashion by attempting to use a "recipe" borrowed from another institution--a phenomenon which we have often observed in other states where assessment plans have been mandated. Moreover, institutional leaders seem to have substantially grasped the fact that institutional initiative with respect to assessment may enable them to address some important local problems concerning the integration and improvement of the undergraduate curriculum.

Within this overall picture, however, patterns of support differ among institutions. UA currently enjoys the advantage of a head start in assessment planning and consequent administrative familiarity with the issue. At the same time, a range of UA undergraduate initiatives currently under way, and funded through several Decision Packages in the past two years has generated considerable momentum in the area of undergraduate education: undergraduate education is consequently comparatively high on the agendas of UA's academic leadership. Moreover, the UA Provost is "information conscious" and is demonstrably interested in obtaining information on the effectiveness of instructional programs--both for internal planning purposes and for communication to interested parties outside the university. Consequently, he seems willing to invest real resources in the effort--a willingness demonstrated by the establishment of a staffed Center for Research on Undergraduate Education (CRUE) charged with the assessment mission. In such a climate, our only concern is a need to set priorities and to keep expectations within bounds. The success of CRUE at UA depends upon its ability to sustain a body of long-term research on undergraduate effectiveness--a fact that the Provost understands and supports. Important in the coming years, however, will be to guard against temptations to deploy CRUE's limited resources toward short-term data gathering efforts designed only to address immediate problems.

Because ASU is currently recruiting a chief academic officer, its position with regard to top administrative support for assessment is more uncertain. Indeed, assessment planning has been somewhat encumbered by reluctance to make key staffing, organizational, and funding decisions until a new chief academic officer is on board. This condition is reflected in ASU's working plan for assessment to be implemented next year, which contains no explicit budget or timelines for carrying out proposed activities. At the same time, there appears to be willingness to support implementation of the effort on the part of mid-level academic leadership--in particular Deans in some of the key colleges and schools. Evidence of past willingness to act on evaluation information is provided by ASU's evolving program review process--a process founded on the Board of Regents' mandated decennial review process for all academic programs. While the implementation of program review is not uniform across units at

ASU, several schools and colleges have both taken the process seriously and have added a number of local enhancements to the basic Board requirements. Until the overall leadership situation in academic affairs is clarified, however, ASU's implementation of assessment will also be uncertain.

For NAU, a major advantage is the perceived clarity of the institution's mission. The fact that NAU has chosen to stress undergraduate instruction in itself speaks favorably for the institution's collective willingness to embark upon a meaningful assessment program. Interviews with the President and top academic leadership support this overall perception: all begin with the premise that undergraduate instruction is what the institution is primarily about and that assessment represents an excellent vehicle for improvement. Moreover, the manner in which NAU has chosen to respond to requests of the EEC Task Force for information on a variety of aspects of undergraduate education also provides evidence of broad understanding. Rather than develop separate reports for "assessment", "advisement", and "involvement", the institution charged a single committee to address all three--an action that appropriately stresses the integrated nature of the issue. Finally, NAU has a demonstrated history of using obtained information for decisionmaking through its program review process. The coverage, structure, and timelines for this process go well beyond the Regents' guidelines for decennial reviews, and there is substantial evidence of past use of review results to accomplish actual dollar reallocations among programs.

Because of the critical nature of top administrative support, we believe that the Board should carefully monitor its condition at each of the institutions in the coming years. Important institutional indicators of support will include the degree to which identifiable dollar resources are devoted to the effort, and the degree to which requests to the Board (and to others) for funds to support new programs or program improvements are grounded in appropriate evidence about past and anticipated instructional outcomes.

o Institutional assessment programs:

Successful institutional assessment programs almost never start from scratch. Most rely on a careful blend of existing data resources, judiciously supplemented by a small number of well-designed additional studies or examinations. Even if a large number of new data collection initiatives are contemplated, these too depend upon the existence of a well-conceived structure for institutional management information. Almost all successful undergraduate impact studies, for example, will rely upon the integrity of the student record system and upon the ease with which information from that system can be identified, extracted, and manipulated. Most will also rely heavily on existing "points of contact" with students where data are already collected--such as orientation, registration, placement testing, course evaluation, and existing comprehensive examinations and surveys. As a result, the current condition of management information at any institution, with regard to both its scope and integration, constitutes an important factor in determining the probability of success of a proposed assessment effort.

With regard to basic information infrastructure, we found that the three institutions differed considerably. In the best position is probably ASU, where existing data and analytic resources are in good shape. The existence of an Office of Institutional Analysis charged with broad research responsibilities means that access to student and other archival databases is comparatively straightforward. Integrity of the basic student record system upon which most outcomes analysis must rest is good, and the construction and maintenance of longitudinal research files drawn from multiple data sources appears routine. Similarly, a research program in Student Affairs, though limited in scope, undertakes a series of well-constructed student surveys and other relevant studies. Not only do such studies yield information in their own right, but they also constitute an opportunity for addressing some broader research questions about levels of student involvement and quality of effort. One area needing attention, however, is information about graduates and former students.

A second advantage enjoyed by ASU is the fact that many of the university's programs are independently accredited, and must consequently undergo a process of external review that often includes assessment of student learning. To a lesser extent, this characteristic is shared by the other two campuses as well. As a result, there are already some local programmatic models available for conducting such activities as follow-up studies of recent graduates and their employers, or for assessing student skills development in practical settings. Many of these programs also require certification testing. Moreover, ASU's new General Studies curriculum provides an excellent structure for evaluation. Not only are the goals of the curriculum well specified, but a proposed periodic review process for all General Studies courses also constitutes an opportunity to undertake a range of data collection efforts aimed at determining overall curriculum impact. In addition, widespread discussion of this curriculum and its goals have already to some extent raised faculty consciousness about the nature and structure of undergraduate education at ASU.

At UA, we find basic information resources to be present and sound, but disorganized. The existence and activities of a Student Affairs Research, Evaluation, and Testing Center is a major asset for an institution of UA's size and type, and the kinds of studies undertaken by this office (for example an ongoing longitudinal student tracking database and several comprehensive student survey efforts) constitute a major resource for an integrated student assessment program. Furthermore, programs such as UA's Upper-Level Writing Proficiency Examination (ULPWE) are both commendable and very unusual at a major research university. Not only does this examination yield outcomes data in its own right, but it also provides an excellent "mid-point" curricular setting for collecting additional assessment information from students. Balancing these assets, the articulation among various data collection and analysis "pockets" at UA is loose to nonexistent. This situation is being addressed, in part, by the establishment of the Center for Research on Undergraduate Education (CRUE), but this office is both new and is not intended to provide a clearinghouse for all management information. Between them, however, CRUE and the Student Affairs research office should provide a good informational foundation for assessment: the Center will continue to do large-scale student flow or behavioral studies using student records and will continue to do most survey research, passing on results to CRUE as needed; CRUE itself will have primary responsibility for assessing cognitive outcomes and for conducting studies on the impact of curriculum.

The situation with regard to basic informational capacity at NAU is less favorable. For an institution of its size and type, we find NAU seriously underinvested with regard to management information--particularly information about students. Currently the university maintains no regular student survey or alumni follow-up efforts, and only limited longitudinal tracking databases--data resources that are not uncommon at institutions of half its size. To seriously undertake a student assessment program,major deficiencies in "data infrastructure" will need to be addressed--a situation recognized and reflected in the current draft plan for assessment.

At the same time, NAU possesses some structural assets for efficient collecting additional information on student outcomes. First, effective local development of the program review process provides a foundation for extending assessment. Modifying current program review guidelines to require additional data on programmatic effectiveness, as contemplated by the university's plan, will largely answer the need to collect assessment information at the departmental level.Secondly, recent changes in many undergraduate major programs at NAU to include a "capstone" course place the university in a good position to undertake additional assessment. Because such courses are themselves intended to be integrative, student performance in them can be treated as evidence for the attainment of identified curricular goals. Moreover, the "setting" provided by capstone courses is a natural one for "embedding" program-specific assessment activities such as major field comprehensive examinations, integrative projects, or portfolios of student work.

The Task Force should recognize the fact that the efficiency and effectiveness with which assessment can be implemented depends to a great extent on the presence and organization of existing management information. Insofar as these are consistent with other concerns of the Task Force, we would support any recommendations contemplated to integrate and strengthen the information function at each of the three universities.

- Organization of Assessment:

Experience at other institutions has shown that successful assessment requires careful planning and adequate time to develop. It also requires a consciously organized effort--including clear assignment of responsibility for the activity, adequate support, and an ongoing research program founded upon mutually supporting data collection efforts. A primary function of institutional assessment plans--in place at UA and under development for submission by May 1, 1988 at ASU and NAU-- is to outline exactly how the institution intends to meet these requirements. Consequently, we devoted con-siderable attention to an examination and critique of the three assessment plans.

At UA, the groundwork for a comprehensive student assessment effort has been extremely well laid in a Task Force Report produced by the university last year. Compared to others of its type nationally, this Report is unusually cogent and well-written. It recognizes that comprehensive assessment is a complex, multifaceted enterprise that will take time and organization to implement successfully. It also recognizes and addresses two important attributes of assessment work that are often overlooked: the fact that studies of curricular impact must be longitudinal in order to document change as students progress, and the fact that studies must equally embrace data collection about inputs, processes, environments, and outcomes in order to provide an informed basis for intervention. The centerpiece of the report is establishment of a Center for Research on Undergraduate Education (CRUE), reporting to an Associate Vice-President for Undergraduate Education, and charged with

(a) carrying out a limited number of ongoing longitudinal studies,

(b) documenting, coordinating, and disseminating the results of additional assessment-related studies and bodies of information held by others, and

(c) working with individualdepartments (several each year) to develop local program-specificassessment instruments and procedures.

Staffing and budget requirements for CRUE are fully outlined in the Report, as are the explicit types of studies that CRUE will undertake. At the same time, we note that the Report and its contents have not been widely discussed at UA, and that student assessment remains a relatively unknown activity among faculty and line administrators. We suspect that this will change when the process actual data collection begins.

Planning at the other two campuses is at an earlier stage of development, as assessment plans are to be submitted in May. In essence, both are "plans to plan"--proposing a process for next year that emphasizes pilot data collection on a wide range of instruments and establishment of a coordination function, with a final decision about ongoing organization and procedures to be made at the end of the year. Neither plan explicitly establishes a "center" on the UA model, though needs for additional staff to coordinate the effort and to provide technical expertise are addressed by both. Both plans also outline an organizational nexus for the effort. At ASU, this is provided by the office of the Vice-President for Academic Affairs, with appropriate linkages to Deans through such processes as program review. At NAU, the probable organizational setting for the assessment function will also be academic affairs, but draft plans also establish formal linkages between assessment activities and established faculty committees such as Liberal Studies and the Curriculum Committee.

Emerging plans at ASU and NAU also address the kinds of instruments and procedures to be used in assessment. Under consideration at ASU is administration of the ETS "Academic Profile"--a standardized instrument for assessing the outcomes of general education, the coverage of which appears congruent with the goals of the university's General Studies program--as well as several local options. Moreover, like UA, both ASU and NAU intend to undertake a limited number (six or seven) of "pilot projects" in assessment at the departmental level. These will be fielded both to provide institutional experience in using assessment results and to explore some particular data collection techniques. At both institutions, a summary "model" attempts to describe what kinds of data collection options are under consideration for what purposes at what points in the curriculum. At ASU this is embodied in a sequence of phases for program development. At NAU it is shown as a "timeline" documenting proposed data collection options and points.

The Task Force should be aware that considerable changes in these plans may occur as the institutions gain experience with what works and what doesn't--as indeed has already occurred at UA. It should therefore encourage flexibility in the ways institutions choose to develop their efforts. At the same time, institutions should be held to the spirit of their proposals--particularly when they call for explicit budgetary commitments or when they document the way they will use obtained results.

- Implementation Status and Prognosis:

All three campuses are at a relatively early stage of implementation. None has actually collected data, or even finalized the design of data collection instruments and approaches. Because of an earlier starting point, UA is farthest along, but progress has been largely organizational in the establishment of CRUE and the recruitment of staff. Overall, national experience indicates that all three institutions are about where they should be. Clearly it will be another year before any of these efforts pay concrete dividends. But most implementation efforts that we have observed have taken at least three years to evolve--with the first year devoted to planning, the second to pilot data collection, and the third to full-scale operations.

At UA, the primary accomplishment has been formal establishment of CRUE--complete with assigned staff, equipment, and space. While implementation was slowed a bit last fall, concrete plans are currently being developed for a comprehensive program of longitudinal data collection. Beginning next fall, a group of some 400 new freshman will be tracked through their undergraduate experience, and a range of data on this study group will be compiled. Simultaneously, a group of approximately 200 juniors will be studied as they move through the upper division. Types of data to be incorporated into these longitudinal studies include student record data, performance on placement and proficiency examinations, persistence information, survey data, and data drawn from a series of in-depth interviews exploring perceptions of the campus environment. Pilot testing of the interview technique on a small group of graduating seniors is being contemplated for this spring.

At the same time, two additional ongoing efforts are under way at UA. First, CRUE staff have surveyed all departments and academic units to determine the kinds of assessment procedures and information already available. Results are being incorporated into a "database of databases" as a resource for future studies. Secondly, CRUE staff are beginning the process of identifying a number of target departments for piloting end-of- program major field assessment techniques next year. Current plans are for staff to work with faculty in these departments to help develop appropriate assessment instruments and to aid in interpreting results.

Overall, we believe the prognosis for assessment at UA is good. Administrative support for the initiative is high, limited though adequate resources have been provided, an appropriate organizational structure is in place, and concrete plans for data collection are being finalized. At the same time, we have some concerns about information "infrastructure" and about the need for priority setting in CRUE's efforts in the next few years. There is a pressing need to coordinate a highly decentralized information structure if an efficient assessment program is to be realized. CRUE staff also need to have concrete "marching orders" about research priorities lest their limited resources be dissipated in a range of short-term efforts. We have communicated both these concerns directly to the institution, and are confident that they will be addressed.

ASU is currently in the process of finalizing its assessment plan. A faculty/administrative committee is in place charged with developing the plan, and will likely be the vehicle for overseeing its implementation next year. At present, a faculty member in Educational Psychology has been given the temporary assignment of both chairing the committee and of coordinating the planning effort. Current proposals call for a full-time professional to be brought on board next year to take over these responsibilities. An explicit plan for ongoing research has not yet been decided upon; rather the institution will undertake a series of experimental data collection efforts next year--including pilots in general studies, and in a range of major departments. As noted previously, however, planning for assessment at ASU has been considerably hampered by the absence of a chief academic officer. Not only does this mean that firm budgetary decisions are difficult, but it also has caused some uncertainty about priorities for undergraduate education and the manner in which any instructional initiative should be staffed or housed. When this uncertainty is resolved, ASU should be in a good position to undertake a credible assessment effort.

NAU is also in the final stages of preparing a draft plan for institutional assessment. As at ASU, planning is proceeding under the auspices of a faculty committee, although unlike ASU and UA, all undergraduate topics are being treated in an integrated fashion. Primary responsibility for coordination is currently assigned to the Executive Assistant to the President. Although permanent staffing arrangements are not yet certain, there is a clear commitment to devote necessary resources--including staffing--to carry out the effort. At the same time, there is evident, and we believe appropriate, emphasis on using existing organizational resources and committees to accomplish the task of assessment. Data collection activities proposed for the coming year, as at ASU, consist of a variety of pilot projects--some in general education and some in selected major departments. Because of NAU lacks a number of basic data collection mechanisms such as regular student and alumni surveys, however, considerable attention must be devoted toward developing and gaining experience with such methods in the coming year. These needs are fully recognized in NAU's draft plan.

RECOMMENDATIONS

Based on these observations, we offer a number of broad recommendations for consideration by the Task Force. Recognizing that the most effective assessment programs are mission- specific and are "owned" by institutions themselves, we first believe that the basic architecture of the Board of Regent's mandate is appropriate. Institutions should be required to establish assessment efforts within broad guidelines, should report how they have funded and organized them, should communicate the lines of research that they are engaged in and how these inquiries are related to their instructional goals, and should demonstrate that they are using the resulting information for decisionmaking.

For the most part, we believe, these objectives can be achieved within the framework of existing statewide processes and reporting requirements. At the same time, we believe that some processes and reporting requirements may need to be modified to encourage additional assessment practices at the campus level. Integrating assessment activities into such existing mechanisms as the decennial review process, for example, has an advantage of efficiency, as it avoids the kinds of duplicative data--gathering that have proven an obstacle in some states. Making assessment results a clear part of existing and familiar statewide evaluative mechanisms also increases the likelihood that outcomes data will actually be used for decision-making.

Consistent with these arguments, we offer the following broad recommendations:

- Current decennial review processes required by the Board should include a more explicit outcomes component.

Using concrete data, programs under review should present evidence about

(a) the cognitive development of students enrolled in the program against an established and articulated set of knowledge and skills objectives consistent with the program's goals and curriculum;

(b) the success of students after completion of the program, with respect to further education and training, job placement and performance, and satisfaction with the program; and

(c) the adequacy of the program as viewed by important external constituents including, where appropriate, employers, graduate schools, and peers in the discipline. Consistent with practice in other states, moreover, the review cycle should be shortened to a period of five to seven years.

- Requests for additional funding through "decision packages" should be explicitly supported, where appropriate, by information drawn from the institution's assessment program.

Where new initiatives are proposed, institutions should be required to state how evidence of "success" will be compiled, and how the process of obtaining performance information will be made a part of the ongoing campus assessment effort.

- Included in the decennial review cycle should be a comprehensive review of undergraduate education--with particular emphasis on general education.

Academic evaluation at both the campus and the system level is currently undertaken on a program-by-program basis. Nowhere is there an opportunity or a mechanism for evaluating undergraduate education as a whole--though it is claimed to function as such. This is particularly true of the "general education" component of undergraduate instruction which, arguably, is from the state's perspective one of the most important activities that institutions engage in. Consequently, we recommend that a year-long multi- faceted study of undergraduate edu-cation be undertaken at the end of each complete program review cycle. During this year, no other major programs would be evaluated, and all attention would be devoted to examining the structure, functioning, and outcomes of the undergraduate curriculum as a whole. Several states have successfully undertaken such studies as part of the regular program review cycle in recent years--among them Missouri and Illinois--and these examples might be examined as models.

- Institutional Assessment Plans should clearly identify the means by which students are initially tested for basic skills (reading, writing and computation) at appropriate levels to engage in college level work.

Though not a part of college outcomes assessment, we found procedures for assessing incoming student basic skills to be somewhat haphazard at the three campuses. While we do not recommend adoption of a uniform, statewide basic skills examination such as those in place in Florida, Tennessee, New Jersey, or Texas, national experience suggests that all institutions should adopt basic skills examination programs that

(a) test all incoming students using the same instrument (as opposed to allowing students to "place out" of the examination by means of an ACT score or high school GPA--as sometimes occurs at present),

(b) use these scores to guide a mandatory directed placement program that places students in appropriate remedial settings, and

(c) requires the students so placed to retake the basic skills examination and to achieve a score equivalent to students not identified as in need of remediation.

- Finally, we concur with the findings of other observers that the "information function" at both the institutional and Board level needs attention.

While we believe that proposed assessment initiatives at each institution, if properly organized and supported, will help to remedy current deficiencies in management information, we would also support any additional recommendations that the Task Force might make regarding improvements in information and planning at the three institutions. At the same time, we concur with findings that the Board of Regents should reorient its priorities with regard to information-collecting to primarily information for statewide strategic planning rather than emphasizing information for accountability. While a full treatment of this issue is beyond the scope of this report, we would refer the Task Force to a "White Paper" on accountability that we prepared for the Colorado Commission on Higher Education, supplied as a resource to the Task Force staff.

Overall, we find that campus-based efforts to assess the effectiveness of undergraduate education in Arizona are proceeding adequately. In the long term, however, these efforts will only be successful if they enjoy continuing and sincere support from both top administration and faculty, and if the results of assessment are taken sufficiently seriously by the Board to visibly inform decisions that matter.

REPORT ON HONORS PROGRAMS AT THE UNIVERSITY OF ARIZONA, ARIZONA STATE UNIVERSITY AND NORTHERN ARIZONA UNIVERSITY

C. GREY AUSTIN

The context of this report is a more inclusive Task Force study of the quality of undergraduate education at the three state-assisted institutions of higher education in Arizona. My assignment was to review and evaluate the honors programs at those three universities and to make recommendations for improving the delivery of educational services to that special group that each university identifies as its "gifted and talented" students.

Some of the newer assessment techniques have not yet been applied to the study of outcomes of honors education. Consequently, little data were available to assist with this evaluation. The methodology for this study, therefore, was limited to a careful review of printed materials and to interviews with honors students, faculty and administrators during visits to each of the universities. The schedules for the campus visits are Appendices A, B and C.

My own preparation for this assignment consists of eighteen years as University Honors Director at Ohio State University, consultant to more that thirty colleges and universities on the planning or evaluation of honors programs and a variety of responsibilities with the National Collegiate Honors Council (NCHC), including service as Executive Secretary-treasurer and President. I am the author of the NCHC Handbook on the Evaluation of Honors Programs. My field of doctoral study is Higher Education Administration, and my specialty within that field is the study of honors education. A summary of my Curriculum Vitae, with emphasis on honors activity, is attached as Appendix D.

Before turning to the specific analysis and recommendations for each of the three universities, I plan to present an overview of honors education in order to respond to the general question of what should be expected from them. My evaluation is rooted in what I understand to be the history of honors work in the United States, the rationale and objectives for honors programs and the general patterns by which honors programs are now presented, particularly in public, comprehensive universities.

C. Grey Austin PhD. (University of Michigan) was honors director at the Ohio State University for 18 years. He has served in numerous capacities for the National Collegiate Honors Council including the office of President. He has written extensively on the development of honors programs and has served higher education as a consultant on that topic for almost two decades.

DEFINITION

Honors education consists of the total means by which a college or university seeks to meet the educational needs of its ablest and most highly motivated students. Honors learning is promoted whenever a faculty member responds to an inquisitive student's special interest or an advisor helps a student select courses that will call forth his or her best efforts. An honors program is simply a planned set of arrangements to serve the needs of talented students more adequately than if the matter were left entirely to the initiative of interested individuals.

HISTORY

The history of honors work is coexistent with the history of higher education. The Socratic dialogue, the Oxford tutorial, the German Seminar and the Guild apprenticeship continue to serve as models for contemporary honors programs.

The modern history of honors in this country dates from 1922 when Frank Adelotte established the innovative pass - honors approach at Swarthmore. In 1924 he issued his pioneering report, "Honors Courses in American Colleges and Universities." During the same period, Sidney L. Pressey was publishing articles on the psychology of education for superior students, particularly stressing acceleration. From these early beginnings, each institution developed its own version of honors education. In 1957, the launching of Sputnik called attention to the need to foster talent in order to compete on the international scene, making that year pivotal for the development of honors programs. Joseph W. Cohen, who had been developing an honors program at the University of Colorado since 1928, founded the Inter-University Committee on the Superior Student (ICSS) and became, as he said, a modern Johnny Appleseed sowing interest in honors across the nation. The work of ICSS, including its journal, "The Superior Student," was funded by a grant from the Carnegie Corporation. In 1966, when the funds ran out and Dr. Cohen was ready to pass the reins to others, the ICSS was superseded by the National Collegiate Honors Council, which continues to provide a variety of services to those who are responsible for college and university honors programs.

RATIONALE AND OBJECTIVES

In any institution in which the student body is intellectually heterogeneous, two groups of students are placed at a disadvantage by the regular curricular offerings. At the one end of the continuum are those whose ability or preparation renders them incapable of meeting the challenge of the full program, and at the other extreme are those of such ability and previous achievement that the regular program provides insufficient challenge. There is no difficulty in recognizing that the former group needs specialized counseling, a degree of curricular flexibility and courses at an appropriate level of difficulty. The premise governing programs for the disadvantaged is that all students should be encouraged and enabled to realize their talents. The same premise furnishes the rationale for honors education.

An honors program meets both educational and institutional objectives. The educational objectives are:

1) to identify students whose ability and motivation are so high that

their academic needs would not be met adequately by existing programs;

2) to provide academic opportunities of such caliber that the students thus identified are challenged to perform at the highest level of excellence of which they are capable and through which they may become independent learners;

3) to establish an environment that will encourage appropriate aspirations and achievements by these students and that will foster in them dignity, self-esteem and a sense of their potential; and

4) to derive from the program benefits for the wider academic community such as focusing attention on quality education and a concept of excellence, giving faculty members the psychic reward that derives from working with gifted students and attracting to the campus scholars and speakers who would not otherwise be there.

Certain institutional objectives may also be served by an honors program. These include the following:

First, honors programs can assist in attracting students of outstanding academic ability. These students are an asset, not only for their participation in the teaching-learning process, but also for their contributions in leadership roles and for enhanced possibilities of winning a Truman or Rhodes or Marshall scholarship.

Second, honors programs can assist in attracting and retaining faculty members who are committed to quality education. Outstanding teaching talent is always in short supply, and honors teaching may attract and hold those whom the institution would least like to lose.

Third, honors programs can serve as a useful setting in which to undertake pilot programs that can be adapted to the general student body.

Fourth, honors programs can enhance the public image of the institution as a place where superior scholarship is honored and encouraged.

Fifth, honors programs can assist in attracting funds that would not otherwise be available.

CHARACTERISTICS

The rationale and objectives for honors programs are the same for the small, private, liberal arts college and the comprehensive university. Each type of institution will claim for its honors program some of the natural advantages of the other. The small college will speak of its opportunities for advanced coursework and for research supervised by its ablest faculty. Universities will talk of their honors programs as having the close student-faculty relationships, the small classes and the sense of community of the selective small college. Each will build on its strengths and counter its weaknesses for the benefit of its strongest students.

Traditionally, most honors programs have been liberal arts in concept and content. Many continue to be, but in some of the larger universities there has been a genuine effort to provide honors opportunities in the undergraduate professional areas - engineering, business, nursing, education, agriculture, etc. - as well as in the arts and sciences. These have been difficult to integrate into a single program. There are a few

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Honors Colleges in which a degree of integration has been achieved; there are a number of University Honors Programs in which each of the undergraduate professional colleges may offer its own honors program to its own students while the university-wide honors program offers general education honors courses for students in all programs and serves as an honors umbrella for the separate but related programs. The central structure will recruit students for all programs, publicize the full list of honors courses, sponsor public lectures, convocations and others honors celebrations, provide facilities for honors gatherings, coordinate all of the honors efforts, be the guardian of university standards for honors courses, programs and graduation with honors, and generally symbolize the university's commitment to excellence.

Often, there will be little difference between an Honors College and a well-developed University Honors Program, though the Honors College will have more visibility and, usually, a more central place in the university's pattern of organization. It is important that the program, under whatever name, be institutionalized, i.e., placed securely within the university's administrative and budgetary structure so that it is likely to survive turnover among central administrators.

Curricula in honors programs will consist of courses, colloquia, seminars and individual research arranged in some coherent pattern that meets requirements for graduation with honors. All of the courses will be low enrollment, seldom more that 20, and will be taught by regular members of the faculty, occasionally by a special honors faculty. Some honors courses will be highly integrative, broadening, designed for understanding and perspective; others will be intensive, enriched, rigorous, designed for stronger preparation in special fields. Research will often be comparable to Master's degree work.

Advising will usually feature a combination of faculty contact and honors office advising and will provide information about honors courses and requirements, internships, fellowships, study abroad, merit-based financial aid and national honors semesters, and will provide encouragement for the student to seek the strongest education he or she can handle.

Recruitment will be coordinated with the Admissions office, the Financial Aids Office and Alumni/ae efforts and may benefit from summer institutes and other pre-college programs for gifted students.

Scholarships and financial aid will feature merit-based scholarships and, insofar as possible, will try to free the brightest students of financial distractions for the pursuit of learning. Honors offices will usually be involved in the administration of the Truman Scholarship process and in the selection and grooming of candidates for Rhodes, Marshall, Fulbright and Mellon Scholarships/ Fellowships and other post-college opportunities.

Administration of an honors program is a leadership position - a source of ideas, a personification of honors, building heightened awareness of honors both on and off the campus. The honors director manages a curriculum, coordinates honors-related units, directs an honors center and its staff and program, manages a budget with incentives for honors participation and monitors standards and procedures for honors course approval, senior research and honors at graduation. The director will often participate at or near the dean's level in policy consideration and should report to the chief academic officer.

The building of identity and community is central to an honors program. An honors center and/or an honors residence provide facilities for programming and for governance that includes faculty and students. Special events that celebrate the community of learning and group attendance at honors and other professional conferences contribute to an acceptance of oneself as a worthy person of exceptional talent. A support group is built.University of Arizona

The Honors Program at the University of Arizona has been in existence since before 1962. For more than twenty years it was associated with the counseling center, and the primary emphasis was placed on the development of "whole persons." The only requirements were nine credits of honors work, and these were often met by completion of a senior thesis. The program offered only four or five courses, along with encounter sessions, independent study and the senior thesis. The honors director reported to the chief student affairs official. (This description is too brief to be an accurate depiction of the program in its earlier days, but this is how it is remembered by those who are now responsible for the program.)

Four years ago, a new provost reviewed undergraduate education and found the honors program as described above, being run by a very capable young woman with several years of experience as a member of the honors staff, but without academic credentials. He decided that it should either cease its existence or be changed radically. It was transferred from Student Affairs to Academic Affairs. Dr. Celestine Fernandez, now Associate Vice President: Undergraduate Affairs, became its director for six months while a search was instituted for a scholar/teacher to direct the program. Dr. Clifford Lytle, Professor of Political Science and Acting Dean of Students, was selected to design and build a program.

It was clear to Dr. Lytle and his colleagues that the new program must counter the image of the previous program. In order to make it a rigorous academic program, the number of required honors credits was increased from nine to thirty, and high standards for admission and retention were established. Students now qualify for the program by ranking in the top five per cent of the high school class or presenting an ACT composite score of 29 or a combined SAT score of 1300. Transfer students and University of Arizona students must have accumulated a grade point average of 3.5 or above to enter the program, the same average that students must meet to remain in the program. The program continues "to provide opportunities which enhance the development of the 'whole person' - that individual who is sensitive, humane, knowledgeable, inquisitive, and who seeks a clearer understanding of the past, present, and future," but strong academic work is now primary among those opportunities.

A better balance has been achieved between honors courses and independent study. More than fifty honors courses are now offered each semester, each having an enrollment of 12 - 15 students. For Fall 1988, seven courses are offered through the honors center and serve general education purposes; fifty-nine courses and seminars are offered through departments, with several departments listing honors independent study as well. Most of the courses are offered for freshmen and sophomores where the need for alternatives to the regular courses is greatest. As the students admitted through the new program move toward upper division status, greater efforts are being made to develop honors courses for juniors and seniors, a task that is proving difficult outside the humanities and the social and behavioral sciences.

"In order to graduate with honors, a student must satisfy the following criteria:

1. Maintain a 3.5 grade average.

2. Complete a total of 30 hours in University-wide, college, or departmental Honors courses. It is recommended that 12 of these 30 units be taken at the lower-division level in such a manner that they satisfy some of the general college requirements.

3. At least 3 of the 30 unit requirement must be in University-wide, college, or departmental Honors seminars (396H series).

4. Complete Honors 498H, 3 units (Research) and 498H, 3 units (Senior Project) Requirements for a total of 6 units of 498H.

5. Submit one's completed Senior Project to the Honors Center prior to graduation."

These requirements have been phased in for students who were admitted under the old program.

Advising is provided from a variety of sources. Honors advising is available through the Honors Center and through designated honors advisors in several of the departments and colleges. Honors students are also advised through the normal channels of their college or departmental advising networks.

A broad array of supplemental programs include the following:

HONORS SEMESTER ABROAD

The University's London Semester offers a special segment of opportunities for honors students.

FACULTY-STUDENT DIALOGUE

Individual honors students are invited to meet with a panel of three faculty members. Students gain through articulating and clarifying their ideas and become better prepared to participate successfully in interviewing for future opportunities. Faculty provide feedback to the Honors Center for use in writing recommendations and in advising the students.

INTER NOS

Upper division honors students initiate contact with incoming freshmen or transfer students prior to arrival on campus and continue to share knowledge of campus life after the new student arrives.

HONORS FORUM

On a monthly basis, twelve students meet for lunch with twelve faculty members from various disciplines for conversation and a research address by one of the faculty members.

UNDERGRADUATE RESEARCH PROGRAM

Honors students present proposals for funding for summer research projects that are not course-related. $20,000 are available each year for this purpose.

UNDERGRADUATE RESEARCH FORUM

Each Spring an entire day is devoted to research presentations as at a professional convention. At the close of the day, there is a banquet and the award of a cash prize to fund the winner's attendance at the National Undergraduate Research Conference in North Carolina.

SPEAKER SERIES

The Honors Center sponsors a speaker series that brings nationally prominent scholars to the campus to interact with students and faculty and to make a major presentation to the university community.

SCHOLARSHIP PROGRAM

Renewable fee waiver scholarships are awarded to high school and transfer students who are accepted into the honors program.

HONORS STUDENT ASSOCIATION

This student organization provides cultural and social activities and an opportunity for active involvement with the student community. Students also participate in recruitment and in the Student Planning Board which advises the director and implements such programs as the Five Star Faculty Award.

PRE-COLLEGE PROGRAM FOR GIFTED AND TALENTED STUDENTS

Sponsored by the Honors Center, this Summer program offers a variety of university courses, along with social and cultural activities, to high school juniors who have outstanding academic records. Credits are earned for later application to a degree program.

HONORS AWARDS

A number of awards are bestowed at the annual Honors Award Banquet held just prior to Spring Commencement. Graduating honors students wear a special honors stole together with cap and gown at the graduation ceremony.

HONORS PROGRAM PRIVILEGES

Honors students have a number of special benefits:

Extended library privileges

Permission to register for more than the usual number of credits per semester (with approvals)

Permission for lower division students to enroll in upper division courses (with approvals)

Availability of honors study areas

Participation in all honors events

Opportunity to develop career-related field placements

Honors House

Beginning in Autumn 1988, honors students will be offered the option of residing in a coeducational honors residence hall. The Hall will offer a micro-computer laboratory, weekly performances by music ensembles, drama performances six times each semester, student art exhibitions and frequent guest speakers. The hall is located in close proximity with the new quarters (Slonaker Hall) for the Honors Center.

COMMUNITY OF SCHOLARS

Flinn Scholars, National Merit Scholars and others who have received such special recognition receive special advising services and are gathered together from time to time for community events.

EVALUATION AND RECOMMENDATIONS

CURRICULUM

The honors curricular approach is sound and nicely balanced with basic courses in many of the disciplines and with enough interdisciplinary or topical courses to provide experiences in the integration of knowledge. Most of the courses are now offered at the lower division level, in part because the majority of students have entered since the renovation of the program and in part because there is less need to provide honors alternatives to upper division courses which are generally both more rigorous and small enough to permit greater student participation.

Some departments and several of the colleges are not yet involved in honors work. Clearly, the set of honors offerings and requirements fits the Arts and Sciences, yet the program is intended to be university-wide. Is more time needed to persuade the other units to join the effort? Perhaps. The program has already moved much more quickly than many honors programs to a position of prominence. It may be that a bit more time, persuasion and show of administrative support will convince other deans and chairpersons that participation in the program can provide real benefits to their own programs and students.

Perhaps, on the other hand, the program as it exists is truly the right one for the Arts and Sciences but too inflexible for the undergraduate professional areas. This issue should be explored from the position of strength that the honors program has already attained. It could be further strengthened by vesting in the Honors Center and an Honors Council the power to review, approve and coordinate additional honors opportunities. Under such a pattern, each college might establish its own honors program, drawing on Arts and Sciences and Honors Center offerings to meet general education requirements and offering its own rigorous and participatory courses and seminars. The Honors Center would provide services to the college-based programs while providing its own central program and symbolizing the university's commitment to undergraduate excellence. It may be necessary to provide some incentives for wider honors participation.

If this "umbrella" pattern were to be adopted, a number of quality controls might be located in the Honors Center. For example, each committee that examines a student anywhere in the university on his or her senior project might be expected to have a faculty member from a central honors council as a member in order to assure consistency of standards. Honors courses would need central approval. College honors requirements, in their deviation from the established honors pattern of requirements, would need central approval. Standards for graduation with honors need central controls.

ADVISING

Advising in the honors center is excellent. It is personal and caring; it encourages the student to be the best he or she can be; it provides important and accurate information about academic matters as well as off-campus and post-college opportunities. Students told me that they would like to have a mentoring relationship with faculty members earlier in their college careers.

The Honors Center might strengthen its advising services by establishing a closer relationship with the selection process for Rhodes, Marshall, Fulbright and Mellon Scholarships/Fellowships and with the major honorary societies, Phi Beta Kappa, Phi Kappa Phi, etc.

ADMISSION AND RETENTION

The Honors Center enjoys excellent cooperation with the offices of Admissions and Financial Aids.

Standards for admission and retention in honors are higher than at most other major universities where five to seven per cent of the undergraduates are likely to participate. At the University of Arizona, about two and one-half per cent participate. It is not known what percentage of students qualify but reject the opportunity for honors participation.

The advantages of maintaining high standards are that credibility for academic quality in assured and that the size of the program can be held at a level that fits the current size of staff and facilities, the number of courses available and the commitment to highly personal advising.

These standards may, however, exclude some highly creative and inquisitive students who take more risks that honors students do. High grades can be measures of conventionality; the mix of honors students is limited by too great dependence on grades alone. A related problem is that much of the scholarship aid is dependent on the student maintaining the grade average required for continued membership in the program. This is a further cause of academic caution. Finally, the institution's power to recruit that second level of students (top ten percent, ACT of 28, SAT of 1250) is limited because these students are eligible for honors programs in other excellent institutions.

These difficulties are tempered somewhat by the fact that students who do not quite qualify for membership in the program are permitted to take honors courses, may elect to carry out senior projects and may apply for summer research grants.

At some point, and only University of Arizona people can identify that point, it will be appropriate to forget about countering old images of honors. When that time comes, the program can be comfortable with greater flexibility of standards. It might then use an essay or recommendations to identify potential honors students by other that test scores and grades; it might lower the grade average needed to stay in the program; it might simply retain rigorous requirements for graduation with honors while recognizing that many who will not meet those standards will, nevertheless, gain much added value from their honors participation.

The use of tuition-waiver scholarships is effective in recruiting transfer students from the community colleges, but not for retaining them. It appears that there is elatively little chance that most of these students can meet the high standards to continue in honors. Consequently, many lose their scholarships after one year, and the scholarships become available to recruit the next crop. I suggest a study of scholarship use to determine whether the current practice is the most effective use of the funds.

SIZE OF THE PROGRAM

The program continues to grow. It has not yet had the benefit of four years of recruitment to the current pattern; units outside Arts and Sciences are to be brought into the honors orbit; standards may become a bit less confining. The president would like to see the size of the program doubled - to 1,200. There is a need to examine the implications of larger numbers.

A larger program would call for more honors courses and seminars and an expansion of staff and facilities, both program and residential. The on-campus residential needs for a program of 600 students can be met nicely by a residence hall that houses 160; an additional residence to meet the needs of a larger program would be a step toward decentralizing honors, just as would the establishment of honors programs in business, agriculture, education, engineering, etc. The new facilities in Slonaker, not yet occupied by honors, are already too limited to accommodate a staff member for the intercollegiate debate function that has recently been added to the honors collection of responsibilities. Perhaps the Honors Center must spawn satellites in order to continue to provide personal attention. Another of those satellites might come about through the placement of an honors staff member in the Honors House to arrange programming.

FACILITIES

To continue, the proximity of Slonaker with the honors residence begins to establish honors as a visible presence and to provide facilities appropriate to programming. The Slonaker lounge is an inviting gathering place for students; seminar rooms will relate the teaching of honors courses to the Center. I am told that the Slonaker location does not furnish adequate parking, a problem that can complicate recruitment if it adds a note of unpleasantness to the visits of prospective students and their parents, that can inhibit faculty from attending meetings and student/faculty gatherings and that can damage an otherwise flawless staff relationship.

Is it central enough? The new location in on the periphery of the campus, but it is larger than the current quarters, is on the ground floor, has a very usable patio area and is nicely appointed. And it is almost adjacent to the honors residence. Can more space be found as the program grows in size and as the central administration asks honors to take on added responsibilities? Or will each new need be met, as with the problem of locating the debate coach, by a scattering of staff and functions. One can easily propose a more decentralized pattern, but one of the Honors Center's great strengths is its well-organized, dedicated, happy staff. They work together productively and provide the feeling of family both among themselves and for the students who move easily into and out of the Center. It may be difficult to retain that quality in an expanded or scattered program.

It is premature to suggest that the Honors Center might become an honors college, but further growth in numbers, the prospect of becoming truly university-wide and the expansion of related functions may justify the possibility of college status in a few more years. If that prospect is realistic, then the issue of appropriate facilities will need to be a consideration in the near future. Ideally, the facility for such a centerpiece of quality should be more central than Slonaker and should provide more honors space and better parking.

ADMINISTRATION

The director reports, as an honors director should, to the chief academic officer of the university. The Provost and the Associate Vice President for Undergraduate Affairs are very supportive and knowledgeable about the honors program. The program is receiving excellent direction from Dr. Lytle. Ordinarily I would recommend that a directorship of a program of this magnitude should be a full-time position, but I know of Dr. Lytle's wish to continue teaching and of his value in that role, and I would not suggest any move that would change a situation that is so obviously productive. The director gives full-time effort and the staff responds by giving its best.

It is important to institutionalize the program so that it will not be vulnerable to changes in administration, so that its continuation will not be dependent on the enthusiasms of a few individuals. For this permanence, it needs a permanent location, a firm place in the budget, positions in the university's personnel deck and a recognized reporting line directly to the chief academic officer.

Honors needs a permanent budget line. Whether this is a line item in the state budget or not should be determined by those who know Arizona's fiscal picture better than I. The Honors Center has been treated exceedingly well. Its monetary requests have been granted, and whenever the Provost has asked the Honors Center to take on another responsibility there has been provision for staffing and funding. However, assurance of continuation funding is not as certain. The program has grown so rapidly that much of its funding has been ad hoc. It now needs budgetary security.

ADDITIONAL RECOMMENDATIONS

These issues were raised during my visit and deserve further attention:
Grading in honors courses is of concern to students. They report inconsistencies and the use of "the curve." It may be useful to state often, to both students and faculty, that it is the policy of the Honors Center that students should be neither penalized nor unduly rewarded for their honors status. That statement might also include the reminder that a normal curve assumes a normal population, large enough so that statistical measures may be used with significance. A curve is not appropriate to a small class of highly selected students.

Better quality control with faculty members who teach honors courses will come as knowledge of and respect for the honors program grows. The director might gather together a group of faculty who represent a variety of fields and moderate a free-ranging discussion of their experiences in teaching honors course. As they share their problems and successes, they teach each other, they discover one another's standards, and the director has an opportunity to inject his ideas and hopes.

Students report that freshmen view the senior project as an insurmountable hurdle that will prevent them from moving successfully through the honors program, and they suggest that they be introduced to research earlier in their college careers, as those who take honors chemistry are. Another suggestion is that brochures and publications, as well as Orientation presentations, be reviewed to be sure that the senior project is presented as an interesting opportunity, not a hurdle to be jumped.

Explore the possibility that some regular way may be found to involve visiting, or distinguished, or Regents Professors in honors programming.

Is it possible to provide scholarship support for all honors students?
While there is optimism about the Semester Abroad for honors students, it has not yet met the expectations expressed by the staff or published in honors materials. If those expectations cannot be met, the honors program might consider collaborating with other universities in their foreign study programs. Some are excellent and would challenge honors students, though they may not carry the honors label. Perhaps this is one program that does not need a separate provision for honors students.

ARIZONA STATE UNIVERSITY

In 1983, the Vice President for Academic Affairs, Jack B. Kinsinger, suggested that the honors program, which was then located in the College of Liberal Arts and Sciences, move toward university-wide status. Through a combination of strong recruitment efforts and program building, there has been a five-fold increase in participation by students who are pursuing majors in all of the undergraduate colleges. By 1986, the breadth of participation was sufficient to change the title of the program to University Honors Program, and within the past year the reporting and budget lines have shifted from Liberal Arts and Sciences to the Office of the Vice President for Academic Affairs. At the time of my visit in late March, a proposal was before the University Senate "to enhance educational opportunity at ASU by reorganizing the University Honors Program as the University Honors College (UHC), thus providing

(1) more widespread and efficient undergraduate access to ASU's extensive scholarly resources,

(2) a highly visible option for undergraduates who seek an innovative and challenging educational experience and

(3) a clear, public sign of ASU's commitment to undergraduate excellence."

That proposal also includes the following items:

The title of the Program Director would be changed to Dean of the College.

McClintock Hall, which once served as an honors residence, would be established as an Honors Residence Hall and would also house the administrative and program offices of the Honors College. McClintock Hall occupies a central location on the campus.

An Honors Council would be named to function analogously to the Graduate Council.

A fund-raising campaign would be established through the Development Office to raise an endowment to support scholarships, entertainment and social/ cultural events and future renovation.

A visiting lectureship would be established to "buy out" the dean's time from his or her academic department. This item might be postponed because of financial problems, but the commitment is requested.

A public relations effort would be initiated to draw attention to the establishment of the college in order to increase the status of the university, to aid in student recruitment and to facilitate the fund-raising efforts.

The proposal has received approval by the president and other administrators, and everyone with whom I talked was optimistic that it would be implemented.
The honors curriculum at ASU consists of Core Courses offered by the Honors Program and both lower and upper division courses offered through the departments. Honors courses are limited in enrollment to 25 per section, and students are given extra opportunity for discussion and writing. In addition, there are "Footnote 18" courses, regular courses that may be taken for honors credit by contractual agreement with the instructor of the course. The additional instruction usually includes out of class tutorial work, supplemental reading and at least one substantial writing assignment. Honors students are also permitted to take an unlimited number of graduate courses (500 level) for which they receive honors credit when they complete the course with a grade of B or better.

The Core Courses are taken by all who enter as freshmen. The first of these is English Composition. The Human Event is the second, a two-semester sequence that covers significant landmarks in humankind's social and intellectual development. The third is a two-semester sequence in Integrated Science, a laboratory course that begins with mathematics, and the fourth is a one-semester course in Integrated Social Sciences. These integrated courses are team-taught and are supported by half a summer salary, about $3,000. Students will usually schedule The Human Event in their first and second semesters, Integrated Science in the second and third semesters and Integrated Social Science in the fourth semester. For students who enter the program after the freshman year, The Human Event is offered in a Junior Year version. It is considered an ethos-transmitting course for honors students.

Also included among the Core Courses is a course on Thesis Preparation Skills, for which an honors student may substitute a research methods course in the major field. Credit for the Honors Thesis is given through the appropriate departments.

Finally, Honors Colloquia are offered by departments to students with honors standing and others with a GPA of at least 3.25 and junior standing. The colloquia topics scheduled for Spring 1988 are "Environmental Problems," "Nineteenth Century Images of Women," "Cultural Signs," "Nineteenth Century Tragic Novel," "Power and Sex in Early Shakespeare," "Italian Film," "Origin and Evolution of Earth," "English Literature in the Early Seventeenth Century," "Folklife: Cultural Boundary Making," "Crime and Social Causation," "The Classical Republican Position," "Science and Politics," "Human Perception" and "Social Problem Theory."

Two different kinds of recognition are offered for honors work. Students may be recognized for completing lower division work with honors by maintaining at least a 3.4 grade average on all work taken and by completing 18 semester hours of honors credits in English Composition and Core Courses. Graduation from the Honors Program requires the 3.4 grade average in all work, satisfaction of departmental major requirements, including Honors and college general studies requirements, completing of 18 semester hours of upper division honors courses with a B or better, including 12 credits in Honors Colloquia, six credits outside the major, three credits of research methods and three hours of Honors Thesis (or six hours of Thesis), and successful defense of the Honors Thesis.

Because of the way the program is structured, it appears that students in any field of study may participate in honors without conflict with their own special fields. There is no necessity for any student to carry more than six honors credits in any semester. Consequently, all of the undergraduate colleges have found it possible to cooperate with the Honors Program. 650 students from all of the colleges take more than 100 different courses for honors credit, and five colleges regularly offer courses, while faculty from nine colleges participate in honors teaching.

The College of Engineering and Applied Sciences has recently announced that it will offer honors versions of all of its basic courses, in addition to its participation in honors research and thesis work. Seventy-five Engineering students now participate in the Honors Program, and Dean Beakley expects that number to rise to 160 with the new honors emphasis. Since the Engineering curriculum already includes liberal arts courses at the junior and senior levels, the honors colloquia fit nicely into the pattern. Engineering carries on an extensive recruitment program through one-week, summer, residential opportunities in which students as young as junior high age are introduced to the field of engineering, both on campus and in visits to engineering firms. The Engineering Dean notes that Engineering students at ASU rank higher than students in any of the other colleges on verbal as well as mathematical test scores. Indicative of the close fit between the Honors Program and the Engineering program are these objectives for the education of freshmen in Engineering:

> "An understanding of values and society,
>
> An understanding of nature's laws,
>
> A competency in the use of a variety of tools for communication,
> An understanding of the nature of engineering, and
>
> A special competency in the use of tools for engineering analysis and design."

The College of Public Programs is another major collaborator with the Honors Program, and it looks forward to further cooperative activity when McClintock become the honors center. The College offers honors colloquia, particularly in Journalism and Telecommunication and Justice Studies. Many pre-law students are attracted to honors. The Senior Thesis project is particularly attractive to students who are highly verbal.

A special feature of the Honors Program is the Honors Learning Community. This is a pattern developed at SUNY - Stony Brook, under the name of Federated Learning Communities. ASU is one of the first honors programs to explore its use. The Community consists of about fifteen carefully-selected students who enroll in three regular pre-selected courses that bear on a common theme. That theme becomes the subject of a seminar which is taught by a "master learner" who also participates in the three related courses. The master learner contributes both through the integrative activity of the seminar and through regular conversation with the instructors of the other three courses. It is projected that the honors program will offer at least one Learning Community experience each semester.

Advising of honors students is a function of the Honors Program staff and of both college and faculty advisors throughout the university.

The Association of Honors Students is the primary means by which supplemental programs and events are offered. This organization is open to all honors students, and it sponsors a course evaluation program, an awards awareness pamphlet, a bi-weekly newsletter, picnics, happy hours and retreats. It carries a major role in planning recognition affairs. For the staff, Elizabeth Tregor serves as program coordinator. Since the quarters allotted to the honors program have not provided space in which students may gather, the possibility of building community and identity has been very limited.

Incoming freshmen qualify for admission to the Honors Program by ranking in the top five per cent of the high school graduating class, or by scoring in the 95th percentile on the ACT or SAT. The brochure encourages those who do not meet the criteria fully to apply if they are serious students. It also notes that criteria for graduation with honors are strictly enforced. Continuing or transfer students become eligible with a GPA of at least 3.25 and with sufficient time remaining to complete honors requirements.

To remain in good standing in the program, a GPA of 3.25 is required through the first semester of the junior year, when the average becomes 3.35, then 3.38 and finally 3.4 for graduation with honors. I am told that there is no special strategy for retaining students - the director is available to talk with and is willing to offer second chances.

EVALUATION AND RECOMMENDATIONS

ADMINISTRATIVE PLAN AND FACILITIES

If the proposal for an Honors College is approved and if McClintock Hall is renovated in a way that will provide housing, program facilities and administrative offices for the entire honors enterprise, then Arizona State will be well on the way to national prominence in the honors movement. I am not aware of any other college or university in which honors will have such real and symbolic centrality, or in which the academic and developmental contributions to student lives will be more highly integrated. It will deserve and receive national attention.

A major concern is the adaptability of McClintock Hall to the proposed uses. It has been scheduled for demolition after 1990, though it appears that that decision can be set aside. The plans for immediate renovation call for the conversion of some student rooms into offices for director and staff, and the second phase would convert more rooms for computer use, seminar rooms, commons rooms, and a guest suite. While it seems feasible to folllow this plan for quick access to the facility, and certainly larger quarters are needed, I wonder if renovated student rooms can provide the quality of space needed to house the dean of a college, to entertain prospective students and their parents, to attract commuter honors students to consider it their home base. If it should not be adequate for these purposes, then it is time to begin planning an administrative and program wing to be added at some future time.

STAFFING

Planning should also go forward for staffing to match the growth of the program. Both the size of the program and the size of the staff have been limited by the space available in Krause Hall. With the move to college status and to a central facility, and with the involvement and support of the other colleges, it is reasonable to expect that the program may double in size within the next few years. The director will take on all of the administrative functions of a dean. At the very least, there will be a need for an administrative assistant, a program specialist, additional personnel for advising and recruiting and additional reception/secretarial/word processing persons.

BUDGET

Instructional funding is a major problem for the program. There are two faculty lines, and some faculty are freed to teach honors core courses by of providing the departments with funds for TA replacements. It is considered that the departments have a responsibility to provide instruction for the honors courses they offer. This is a sound principle, but the commitment to honors is severely tested when there is a budget shortfall. Recently, there were severe budget cuts, and several honors courses were cancelled as departments, forced to make choices, chose to drop honors courses which are inevitably more expensive. The honors program needs funding to serve as a buffer against the loss of courses.

The program also needs instructional opportunity funds so that it may respond quickly when a possibility to offer a course presents itself. The twenty-four month budget process is probably a force for stability in most curricular programs, but honors is growing rapidly and needs the flexibility of shorter response time. It needs to be able to take advantage of the unexpected opportunity to make use of an excellent teacher on short notice.

Funds for scholarships are needed, and the proposal now under consideration calls for a fund-raising campaign for endowment that will provide scholarship funds. But that is a long-range plan; needed now are tuition-waiver scholarships for use in attracting and holding the ablest of students. Some honors programs hope to have all of their honors students on scholarship. This may be beyond possibility for ASU, but the freeing of gifted students from financial distractions is a worthy goal.

Should financial security be sought through a line item for honors in the state budget? It appears to be a sound idea, but those who know the political and financial subtleties of state budgeting will need to be consulted before this step is taken.

RECRUITMENT

The Engineering Honors plan will deserve national attention when it is fully operational, and it should be of major assistance in recruiting honors students. Many of the brightest high school students receive encouragement to study engineering, and many universities discover that their strongest students want engineering degrees. Most of those universities offer extremely little in engineering to capture the imagination of the honors student. The ASU engineering honors offerings would appear to be both challenging enough and broad enough to satisfy the best minds that can be attracted to the program.

As the Honors College with a residential component becomes the academic centerpiece of the university, it should be featured in more than just honors recruiting. The presence of a strong honors effort is an indicator, even to students who do not quite fit the honors pattern, that ASU takes academics seriously. Since ASU sends recruiting teams outside the boundaries of Arizona, it would be highly appropriate to include a representative of the Honrs College on those teams. The residential opportunity, integrated as it will be with an exceptional academic program, will prove particularly attractive to out-of-state students.

ADDITIONAL RECOMMENDATIONS

Finally, here are two suggestions for the internal operation of the program.

First, as equipment and staffing permit, develop a letter that can be sent to graduate and professional schools and potential employers on behalf of graduating honors students. Such a letter would explain the superior qualities of an honors education at ASU and would be individualized to indicate how this particular student has taken advantage of honors opportunities to enhance his or her qualifications.

Second, attention to the development of writing skills appears to be a strong component of honors courses, and so it should be. Excellent writing might be further encouraged with some form of tutorial help for those who need it and with recognition for those who perform with a high degree of accomplishment. Writing awards and publication of the best student writing should be considered.

In summary, the ASU honors program is excellent in concept and in practice. It is truly university-wide, and its development within the past five years has brought it to a state of readiness for the status of an honors college. The centrality that will be furnished by college status and by its proposed location, if supported and given security by adequate budget, would assure its place not only as a model and symbol of academic excellence for ASU but also as an example for universities across the country.

NORTHERN ARIZONA UNIVERSITY

The Northern Arizona University Honors Program was founded in 1955 to provide special academic challenges for the exceptional students at NAU. It has existed in various forms since then. In 1982 - 83 a new curriculum was introduced and continues as a central feature of the program today.

In essence, the Honors Program at NAU is a replacement for the basic Liberal Studies requirement. Honors core courses are offered in each of the liberal studies blocks - Letters, Arts, Science/ Mathematics and Social and Behavioral Science. In the Fall of 1988, these are the core courses to be offered:

Social Perspectives: Social Knowing - a course in the sociology of knowledge

Social Perspectives: The Quest for Community in a World of Individuals

Scientific Perspectives: Humanism and Science - " . . . the beauty, challenges and activities of science which may support or deny the Kuhnian Thesis"

Scientific Perspectives: Cosmology - The Universe and Everything - taught by the director of the Lowell Observatory

Artistic Perspectives: Mediated Reality - " . . . will examine mass communication and artistic forms which interpret and create modern reality"

Artistic Perspectives: Photography as Art

Literary Perspectives: Contemporary American Poetry

Literary Perspectives: Folklore, Myth and Magical Realism - taught by a published Chicano poet

Literary Perspectives: Novelists' Perceptions of American Capitalism

Literary Perspectives: Southwest Literature

Honors courses are also offered through several of the departments. Two are scheduled for Fall 1988:

The Art of the Good Conjecture - a mathematics course

The Psychology of Consciousness - psychology, of course

Honors seminars on integrated topics are also offered:

Alexander Solzhenitsyn: His Literature and Politics

Myth

Communication and the Resolution of Conflict

World Resource Conservation Issues

The Honors Program is a participation program rather than a membership program. Any serious student who wants to try the challenge of an honors course may do so. Participating students consult an honors advisor each semester and maintain an acceptable grade average - 3.5 in honors courses and at least 3.2 for all remaining courses.

Each student is invited to assemble a Writing Portfolio of not less than 20 typed pages that reflect his or her best expressive skills. The portfolios are reviewed by a subcommittee of the Honors Council which decides whether the writing skills are satisfactory. If necessary, a course of action is specified to bring the student's expressive skills to an acceptable honors level.

Students may choose to graduate with General Honors, Departmental Honors or a Combined General and Departmental Honors designation.
To be awarded General Honors, the student must complete 45 honors

credits. These include, at the lower division level, an honors core course from each of the four liberal studies blocks, College Algebra and the Writing Portfolio, and, from the upper division, a course from each of the four liberal studies blocks, 9 credits from honors electives outside the major, 3 credits of Independent Study, Directed Readings or Directed Research and two of the integrative seminars.

Departmental Honors appears to be designed so that those who enter the program after the freshman year may have an acceptable honors track. It requires 12 credits in the Honors Core courses, 6 in elective honors courses outside the major, 12 of course work specified by the department, including 3 credits of thesis work and 24 credits in Liberal Studies requirements not covered by the 18 hours of honors courses. The Combined Programs joins the two sets of requirements.

As noted earlier, the Honors Program has no admission requirements other than a desire to participate. This is in keeping with an open admission commitment of the institution, and is, in fact, a workable approach. Students are a rather cautious lot and are not likely to take serious academic risks.

Self-selection into the Honors Program may also include more readily those students of inquiring mind and creative spirit who can enliven honors classes and make teaching exciting. Requirements for continued participation and for graduation with honors provide the quality control. Careful statements of expectations for rigor in the courses serve also to define the characteristics of honors work. It appears that generally NAU honors students came from the top ten per cent of their high school graduating classes and scored 26 or above on the ACT.

A group of students with whom I had lunch gave me the following reasons for choosing NAU rather than UA or ASU:

had a computer science program

smaller class size

knew someone there

visited and liked its friendliness

participated in the Escrow College

fewer TAs and particularly foreign TAs

greater possibility for getting personal recommendations from faculty members

climate and natural setting

emphasis on teaching rather than research

less competitive

personal attention

residential/pedestrian campus

less fraternity/sorority emphasis

slower-paced life style

Recruitment is carried out in a variety of ways. Students in the top ten per cent of their high school classes are invited to visit NAU, with their parents, for Senior Honors Day. The "Escrow College" summer program attracts many who then choose to return to NAU. Cooperation between the Honors Program and the Admissions staff appears well developed. The honors staff is not large enough, and no one has a full-time honors assignment, to travel as much as they would like for recruiting purposes. In an interesting development, an honors freshman, Angela Stahl, has organized an Honors Student Advisory Board Visitation Team. Members of the team contact high schools, arrange visits or participation in college nights and respond to phone calls and letters. They have business cards and have worked out a highly professional approach to honors recruitment.

Although the number of participants in the program has been increasing steadily, fewer than two per cent of the students at Northern Arizona enroll in honors courses in any semester, and students in some fields of study appear reluctant, or unable, to fit honors in with their disciplinary requirements. As a consequence, a review process has been initiated by Academic Vice President Patsy Reed who has appointed an Honors Options Development Committee. The committee is charged "to consider ways in which the designation 'honors' may umbrella more diverse opportunities than it does currently." It will explore the prospect that some students may benefit from enhanced specialization rather than the broad humanities-based program. It will compile a list of the programs and opportunities available to top NAU undergraduates, seek additions to that list and look for ways to relate them under an honors umbrella. The committee is asked to report not later than May 1989.

During my visit the committee asked me to discuss with them the following questions:

"1. What are the keys to successfully integrating the sciences, technical areas, and professionally-oriented programs into a program which has traditionally been liberal-arts oriented?

2. What degree of local (e.g. within specific disciplines) control is possible/ desirable in a broad-based honors program?

3. What are the benefits/ disadvantages of having faculty assigned to the Honors Program on a long-term basis?

4. What benefits should students realistically expect from an honors program at an institution like NAU, and what, realistically, should be expected from them (how much better can they be than ordinary students)?

5. Can you name a couple of institutions like NAU whose programs could serve as role-models for us as we seek to expand honors education at NAU?"

In addition to administering the Honors Program, the staff is also responsible for special efforts with the Flinn Scholars and for administering the Escrow College summer program, the Honors Forum, Honors Week and a variety of recognition events. The Honors Forum brings outstanding speakers to the campus to present topics of interest to the students and faculty of the university and the residents of Northern Arizona. Forum speakers also meet with selected honors classes for presentations and meet with students more informally for discussion. Honors Week is a very extensive program of lectures, poetry readings, induction ceremonies for campus honoraries, films, scientific displays, special college and departmental events, recitals, entertainment, receptions and honors convocations. The keynote speaker for the 1988 Week was Dr. Lynne Cheney, chairman for the National Endowment for the Humanities.

EVALUATION AND RECOMMENDATIONS

GENERAL ASSESSMENT

The program appears to offer a variety of very interesting and well-taught integrative courses and seminars. The freshman core is reported to be working extremely well. Students and faculty find it exciting, sometimes odd-ball, appearing to be helter-skelter, but profoundly significant. I have no reason to doubt that assessment. Faculty report that they find the students to be bright and inquisitive, fun to teach and that they appreciate the availability of funds for field trips and other educational uses. That source of academic excitement should be retained through any reorganization of the program

Those involved with the program also report that the director has to hustle to find the right faculty members to teach, and that there is now no possibility of planning more than two semesters ahead. Faculty members are not rewarded, except psychically, for teaching honors courses. Honors teaching seems to play no role in promotion and tenure decisions. The lack of graduate teaching assistants removes the flexibility of staffing that larger universities enjoy, and so when there are budget revertments, honors courses are most likely to be cancelled.

It appears also that the program has suffered from the lack of a concept and rationale that is truly university-wide. The desire to include all programs and the strongest students across the university is evident, but the program in its present form does not do so.

If the NAU Honors Program is to serve as a university-wide program, two things must happen:

(1) the Honors Options Development Committee must develop a full-blown proposal, based on wide consultation with all programs within the university, for an honors curriculum that will serve both liberal arts and professional students, and

(2) Central Administration must provide the stability of appropriate facilities, full staffing and instructional and program budget that will survive administrative turnover and financial exigencies.

I will elaborate on these two points.

PLANNING

The Honors Options Development Committee should, I think, be willing to look beyond revising the existing program and create something new, uniquely fitted to NAU. The existing program has many good features that should continue to operate while deliberations are under way and should be kept ready at hand to incorporate in the new program as it is developed. What is to be avoided is the assumption that all that now exists is necessary as the core around which an expanded program will be built. The committee should look at the totality of NAU and ask what its most able and highly motivated students need if they are to be helped to develop their talents fully.

CURRICULUM

Rigor and coherence should characterize the educational offerings of an honors program. Each can be provided in a variety of ways. Both are present in many, perhaps all, of the honors courses now taught at NAU, and probably coherence predominates. These are, first and foremost, integrative courses, and, at their best, they are also rigorous. But an honors version of a basic disciplinary course - in chemistry, calculus, literature or economics - may also be both rigorous and coherent. Here rigor would be predominant, but an instructor who teaches the course within the context of its relationships not only to other courses in the field but also to other fields contributes to the sense of coherence that develops as one begins to fit what he or she knows into the larger fabric of knowledge.

Some courses will teach a student how to find integrative connections; others will provide more material to be integrated. Coherence may be found not only through individual courses but also in the mix of courses in the total program that good advising will help the student select.

This is to suggest that both disciplinary and interdisciplinary experiences have their place in a comprehensive honors program. Provision for integration needs to be there; it would be a mistake not to include any connective experiences, but equally a mistake, I think, not to have any intensive, hands-on laboratory experience.

The committee needs to discover what is considered basic in the variety of colleges at NAU and explore how those basics can be presented with the appropriate degrees of rigor and coherence for the best students in each of the programs, then develop a curriculum that uses those basics, offered as honors versions, to meet as many requirements, both general and programmatic, as possible. I would expect that the resulting list of courses would include several times as many disciplinary courses as integrative courses, but that some agreement could be found on the need for a few integrative, perspective courses in each program.

The committee might develop a model of a stable honors curriculum.

ORGANIZATION

The committee will need to establish the centrality of the honors umbrella without threatening the relative autonomy of the college-based programs. A central Honors Council, widely representative, would be given the authority to develop standards for honors courses, honors theses and honors at graduation and the power to approve proposals for anything that might be called "honors." The honors umbrella, whatever its name, would offer the non-disciplinary courses, maintain standards, recruit students for all programs, plan and sponsor university-wide celebrations of academic excellence, coordinate honors advising, maintain a central facility, carry on developmental activity with the units that are slow to develop honors work, coordinate all honors work, administer incentives for honors teaching and learning, publicize honors courses and other opportunities, and symbolize the university's commitment to academic excellence.

BUDGET

The committee would also propose a method of financing and rewards that will assure resources for the Honors Program to staff the classes it must offer and assure that faculty members and departments will welcome the opportunity and responsibility to teach honors courses. Such teaching should be built into the consideration for salary and for promotion and tenure. Other possibilities include released time or a grant for course development, funding to attend professional meetings and subvention for course materials, field trips and the like. A term of service to the Honors Program might be considered for core faculty, or honors professorships might be created, but caution should be taken not to separate a faculty member from departmental colleagues for an extended length of time. It is essential that both faculty and the program be able to plan with certainly a few years into the future. Courses that are idiosyncratic or instructor-specific may be integrative in themselves, but they make much more of an integrative impact when the instructors know what other honors courses their students are likely to be taking next semester and next year and what the topics will be.

The offering of departmental courses should be viewed as a regular instructional responsibility of the departments. Departments should be reimbursed in some way for faculty who step outside the department to teach a course sponsored by the Honors Program.

A line item in the state budget might be sought if the Honors Program is thought to be sufficiently substantial and permanent to justify it. Potential donors who have turned their backs on other needs of the university may respond to a serious and well-conceived plan for a special program that promises to attract and educate students of the caliber of Flinn Scholars and National Merit Scholars. An endowment could be sought for scholarships, social events, research funding, etc., and possibly even for special facilities. Scholarships are particularly needed. I am told that sixty per cent of the honors students at NAU are employed, compared with ten per cent at UA.

ADMISSION AND RETENTION

Admission and retention standards will need attention. I know that the issue of selective admission is sensitive. Honors recruitment is easier when admissions criteria can be stated in terms of test scores and high school rank (with flexibility to accommodate exceptions), but it is quite workable to control the rigor of honors courses and then indicate guidelines in terms of rank and scores of those who are likely to succeed in the program.

Students can be trusted not to take undue risk, and good advising can exercise control over honors participation. Honors programs will usually try to serve the top five to seven per cent of the student body. The projected size of the program will guide the number of courses needed and the decisions about which students should be served.

ADMINISTRATIVE SUPPORT

If the honors program is to serve the institution as well as its students, then the program will need to be elevated to a position of some prominence. While the committee may make recommendations about facilities and their location, what the program will be called, how it will be staffed, where it will be placed in the university's table of organization, and at what level it will be budgeted, these are the administrative decisions that will determine the success or failure of the planning efforts. In order to compete in the State of Arizona, the program will need high visibility as a central function of the university. It will need a location and facilities that symbolize the university's commitment to excellence; it will need sufficient high-quality staff to represent the university to parents, school personnel around the state, and alumni; it will need the same assurance of continuity that the colleges enjoy.

State universities are usually under-funded and under-staffed, and most units feel that they are constantly running behind the demand for their services. It should be remembered that honors programs, as at NAU, are growing and are expected to continue to expand. Consequently, if that growth is not to be inhibited, staffing and budgeting should anticipate growth and allow for it by, to a limited extent, providing resources ahead of the need for them. The honors director should, in all but the smallest of institutions, have a full-time appointment to the program, and, because the ability of the honors staff to respond quickly and appropriately to any honors situation is a measure of the institution's perceived commitment to educational excellence, there must be sufficient staff to do the job.

FACILITIES

There is a proposal to establish an honors residence and to locate the administrative offices of the honors program there. This arrangement can work to great satisfaction if certain conditions are met. Honors housing, based on honors participation rather than on grade average, is a great attraction for parents as well as for students who welcome the chance to be with those who share their interests and goals. It forms a nucleus for honors programming, and it develops a center from which strong leadership for student activities emerges. A coeducational hall has been tried with great success on several campuses.

Whether a residence hall is the appropriate location for Honors Program offices is a more difficult issue. The possibility of integrating the academic and non-academic lives of students is enticing, but that can be accomplished rather well by placing a program specialist in an honors satellite office in the hall. It is most important that the Honors Program be recognized as an academic program, and if the connection with a residence hall damages that image either by identifying it too closely with student affairs or by removing it geographically from other academic units, then the disadvantages outweigh the advantages. The Honors Program deserves, and can carry out its responsibility to the university best when it has, a central, easily accessible, visible facility.

In summary, I found the Honors Program at NAU to be much more highly developed that it had been when I reviewed it eight years ago. At the same time, I believe that the program, given its present form and resources, has reached its maximum development. It has strong administration, though the expenditure of time appears to be weighted more heavily toward special events than toward academic planning. It is the substance of the program more than its public relations that needs attention if it is to become university-wide. The task of planning for greater breadth and flexibility is in good hands, and it is my hope that the incoming academic vice president will renew the charge to the "Options" committee, support its work and, with support from President Hughes, place the new program on a solid footing so that it may survive the budget shortfalls and administrative turnover that have contributed to its problems. I believe an honors program, truly university-wide, has a great future at Northern Arizona University.

APPENDIX A

REVIEW OF HONORS PROGRAM

UNIVERSITY OF ARIZONA

MARCH 28 AND 29, 1988

MONDAY, MARCH 28

8:30	Breakfast with Dr. Clifford Lytle, Director of Honors Program
10:00	Dr. Richard Kissling, Coordinator of Advising: Honors
11:00	Ms. Sharlene Mann, Program Coordinator: Honors
11:45	Lunch with Honors Students
1:00	Student Planning Board
2:00	Tour of Slonaker Hall with Dr. Lytle
2:30	Dr. Don Aripoli, Assistant Vice President: Student Affairs
3:00	Dr. Robert Vignery, Pre-college Program: Honors
4:00	Ms. Bauernfeind and Ms. Osego, Administrative Staff: Honors
6:00	Dinner with Drs. Lytle, Kissling and Vignery

TUESDAY, MARCH 29

9:00	Ms. Allison Titcomb, Coordinator of Recruitment: Honors
10:00	Dr. Nils Hasselmo, Provost
10:30	Dr. Celestino Fernandez, Associate Vice President: Undergraduate Affairs
12:00	Lunch with Drs. Lytle, Kissling and Vignery
1:00	Dr. Clifford Lytle

APPENDIX B

REVIEW OF HONORS PROGRAM

ARIZONA STATE UNIVERSITY

MARCH 29, 30 AND 31, 1988

TUESDAY, MARCH 29

4:00	Dr. Ted Humphrey, Director of Honors Program
6:00	Dinner with Drs. Ted Humphrey and Kathleen Church, Task Force

WEDNESDAY, MARCH 30

8:30	Ms. Elizabeth Tregor, Program Coordinator: Honors
9:30	Dr. Gary Krahembuhl, Associate Dean, College of Liberal Arts and Sciences
11:00	Drs. George Beakley and Ed Wallace, Dean and Associate Dean, College of Engineering and Applied Sciences
12:00	Lunch with Dr. Humphrey and Students
1:00	Ms. Sue Blumer, Honors Coordinator, College of Public Programs
2:00	Dr. Jan Stanley-Muchow, Assistant Director: Honors
3:00	Ms. Judy Kyrala, Recruiter/Advisor: Honors
6:00	Dinner with Drs. Ted Humphrey and George Davis, Task Force

THURSDAY, MARCH 31

9:00	Dr. Clovis Haden, Vice President for Academic Affairs
9:45	Dr. Betty Turner Asher, Vice President for Student Affairs
10:30	Dr. William Weidemaier, Lecturer in Honors
11:00	Dr. Ted Humphrey
12:00	Honors Recognition Luncheon

APPENDIX C

REVIEW OF HONORS PROGRAM

NORTHERN ARIZONA UNIVERSITY

APRIL 1, 1988

FRIDAY, APRIL 1

7:15 Dr. Richard Skeen, Honors Director

7:30 Breakfast with:

Dr. Patsy Reed, Vice President for Academic Affairs

Dr. David Whorton, Associate Vice President for Academic Affairs

Dr. Joseph Boles, Assistant Honors Director

Dr. Richard Skeen

10:15 Honors Faculty and Executive Committee of the Honors Council - Drs. Bryan Short, Tom Kirshbaum, Melvin Neville, Ted Goslow, Gary Buckley and nancy Paxton

12:00 Lunch with Students - Angela Stahl, Jamie Bradford, Ted Levie, Miriam Ashley, Jerry Burns, Christy Majors, Jay Saul, Bob Beuche and Jenny Tuck

1:45 Dr. David J. Markee, Vice President for Student Services

3:30 Honors Options Development Committee - Drs. Bryan Short, David Best, Arne Hassing, Linda Shadiow, Fairlee Winfield and Kooros Mahmoudi

APPENDIX D

SUMMARY VITA

C. GREY AUSTIN

PERSONAL DATA

Marital Status:	Married, Three children, four grandchildren
Address:	447 Richards Road, Columbus, Ohio 43214
Telephones:	Office: 614-292-0307 Home: 614-262-3036

EDUCATIONAL DATA

Western Michigan University, B.S. cum laude, Economics, 1945

University of Michigan, M.B.A., Marketing, 1946

Garrett Theological Seminary, B.D., Counseling, 1951

University of Michigan, Ph. D., Higher Education Administration, 1965

HONORS

Baccalaureate, cum laude; Pi Gamma Mu: Phi Beta Kappa; Phi Kappa Phi; Phi Eta Sigma (honorary); Mirrors (honorary); Sphinx (honorary); National Collegiate Honors Council citation; Mid East Honors Association citation

PROFESSIONAL ASSOCIATIONS

National Collegiate Honors Council, Executive Secretary-Treasurer, 1973-78; Presient, 1981-82; Executive Committee, 1967-70, 1972-83; Publications Board and numerous committees

Ohio Area Honors Association

Mid East Honors Association

American Association for Higher Education

Committee on Interinstitutional Cooperation (Big Ten and University of Chicago), Subcommittee on Honors, convenor

University and College Ombudsman's Association

EMPLOYMENT SUMMARY

1966-Present	Ohio State University University Ombudsman, 1985-present University Honors Director, 1974-85 Assistant Dean - Honors, Arts and Sciences, 1966-85
1966-1970	Journal of Higher Education

	Editor
1963-66	New York State Education Department Consultant for Higher Education Opportunity Programs
1952-63	University of Michigan Assistant Coordinator of Religious Affairs Lecturer, Department of Psychology
1951-52	First methodist Church, Iowa City, Iowa Associate Minister
1949-51	Cooperative Bookstore, Evanston, Illinois Manager
1946-48	Western's Campus Store, Kalamazoo, Michigan Assistant Manager

PROFESSIONAL ACTIVITIES AND CONSULTATIONS

Consultant on honors program development and evaluation at Baldwin-Wallace University, Bluffton College, Bowling Green State.

University, Central Michigan University, Concordia College, Defiance College, Eastern Michigan University, Elon Collegbe, Findlay College, George Mason University, Memphis State University, Miami-Dade Community College, Miami University (Ohio), Moorhead State University, Muskingum College, North Dakota State University, Northern Arizona University, Northern Kentucky University, Ohio Northern University, Parkersburg Community College, St. Andrew's Presbyterian College, Southern Illinois University, Southwestern Adventist College, University of Akron, University of Dayton, University of Delaware, University of the District of Columbia, University of Kentucky, University of Massachusetts at Amherst, University of Minnesota, University of Pittsburgh, West Chester University, William Rainey Harper College, Wright State University.

Other consultantships, chairmanships, staff leadership and accreditation visits with;

American Council on Education, Association of American Colleges, Consultation on Energy and National Security with representatives of federal agencies, Council for the Advancement of Experiential Learning, Lisle Fellowship, Inc., Middle States Association of Colleges and Schools (Pennsylvania State University and University of Pittsburgh), United Chapters of Phi Beta Kappa, United Methodist Church.

PUBLICATIONS

Monographs, chapters, and occasional papers.

Editorials, articles, columns and reviews in

Educational Record, Engineering Education, Forum for Honors, Journal of Higher Education, National Honors Report, The Forum for Liberal Education, United Church Herald.

Handbook on the Evaluation of Honors Programs, National Collegiate Honors Council, 1981.

"Orientation to Honors Education," chapter in Friedman, Paul G. and Jenkins-Friedman, Reva C. FOSTERING ACADEMIC EXCELLENCE THROUGH HONORS PROGRAMS. San Francisco: Jossey-Bass, 1986.

ADMISSION REQUIREMENTS AT ARIZONA PUBLIC UNIVERSITIES

KATHLEEN CHURCH

INTRODUCTION

Coopers & Lybrand raised an important question in their initial Arizona environmental scan.

"Do admission standards insure that students admitted to the universities are prepared to do the work?"

The reasons students do or do not succeed at a University are complex and involve academic, social and economic factors about which volumes have been written. Regardless of the social and economic factors, the harsh reality is that to persist in a university, a student must meet a number of minimum academic standards. Regrettably, not all entering students can meet those standards. National studies estimate that nearly 28 percent of all new entrants into four-year colleges depart from their first university by the end of their freshman year (see Tinto, 1987 for review). Of those who leave, approximately 40 percent transfer to another two- or four-year institution, and 60 percent "drop out," either voluntarily or by institutional action because of poor academic performance. Various studies estimate that from 10 percent to 30 percent of voluntary withdrawals result from academic reasons.

Some students withdraw voluntarily from the university to avoid the stigma of failure while others will endure until forced to leave. Arizona universities are beginning to show concern for this problem. At one Arizona university, approximately one-third of the 1986-87 freshman class did not return to that campus for the sophomore year. An investigation by the institution revealed that of those who did not return, 33 percent were experiencing academic difficulty as defined by the institution. Freshman attrition is also being seriously analyzed at another Arizona university. The class which entered in 1980 has been studied in detail. About 30 percent did not return the following year and of those, one-third left not in good standing.

Nationally, admission requirements usually are based on grade point average, high school class standing and/or performance on standardized examinations. Of these, performance in high school (grade point average or class standing) is considered to be the best predictor of success in postsecondary education if success is defined as the ability to eventually graduate (Astin, 1975). Irvine's classic 1966 study of 659 men who entered the University of Georgia determined that the single best predictor of college persistence was high school grade point average. While high school GPA may be the best predictor for success in a

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Kathleen Church is a geneticist with her PhD from UC, Berkeley. After three years of post-doctoral research, she joined the Department of Zoology at ASU in 1969. Honored for both the quality of research and the quality of her teaching, she has received ten research grants, authored more than 40 research articles, and served as Department Chair at ASU and as visiting professor at York and Duke Universities.

university, it most certainly is not without problems. The correlation between high school GPA and graduation, while statistically significant, is not impressive. Only 12 percent of the variance in staying or leaving behavior can be explained by high school GPA (Irvine, 1966).

Despite its limitations and because there are no better predictors of academic success, high school GPA and high school class standing constitute two of the three ways to qualify for admission to Arizona's public universities. To begin to respond to the question posed by Coopers & Lybrand, we undertook an analysis to answer the following questions:

1. How well are freshman students performing at the universities?

2. Does high school class standing relate to performance at Arizona's universities? and

3. Assuming that other conditions remain the same at the universities, should admission standards be changed?

Our analysis suggests that a substantial number of first-time freshman students that have, at best, a modest chance for academic success are being admitted to the universities. The evidence also suggests that the universities were well advised to undertake a recent revision of admission requirements for non-resident students (see below). We will argue, however, that further study is warranted prior to defining new admission standards for resident students and that the proposed implementation schedule for resident students should be revised. Finally, if the overall quality of the students entering the institutions is to be raised, the legislature, State and the Board of Regents must establish funding criteria which do not penalize the universities during periods of declining enrollments.

CURRENT ADMISSION STANDARDS AT ARIZONA UNIVERSITIES

Admission standards historically have been non-stringent at the Arizona universities for two main reasons:

1. A stated mission of promoting access to higher education by insuring that opportunities are available to all qualified citizens; and

2. A funding structure that is a strong incentive for maintaining enrollments.

Board of Regents' policy establishes minimum but, as of 1987, not necessarily uniform undergraduate admission requirements for the universities. Resident students who are in the top 50 percent of their high school graduating class or who have a grade point average of at least 2.5 or who score 21 on the ACT or 930 on the SAT examinations, respectively, are welcomed into any one of the three universities. Residents transferring to the Arizona universities must have achieved a minimum grade point average of 2.0 for work completed elsewhere. Up to an additional 10 percent of the resident students who do not meet the minimum standards may be admitted under special circumstances outlined by the Board of Regents. Beginning with the entering class of 1987, students admitted to Arizona universities must have completed a more stringent high school curriculum than was previously required. The new requirements preceded, but are similar to, the curriculum suggested by Secretary of Education William Bennett as a model for preparation to enter the nation's universities.

ASU and UA recently increased admission standards for non-resident students (to date, NAU has not followed their lead). Beginning with Fall semester, 1988, to be admitted unprovisionally to ASU or UA, non-resident students must graduate in the top quartile of their high school class, or have a high school GPA of 3.0 or a combined verbal and quantitative score of 23 or 1010 on the ACT or SAT examinations, respectively. An admissions committee must consider students in the second quartile or those who have a GPA of 2.5-2.99. The University may admit, admit with conditions, defer admission, or deny admission to the latter category of students. Non-resident transfer students who achieve a 2.5 GPA in all transferable courses taken at other institutions of higher education may be admitted without conditions. Non-resident transfer students who achieve a cumulative GPA of 2.0 to 2.49 in transferable courses must be assessed by an admissions committee. These individuals may be admitted with or without conditions or denied admission. Theoretically the universities could admit all or none of the students in the admit-by-committee category.The universities hope to conditionally admit students who are at risk in order to more fully address the academic needs of such students. Both ASU and UA have proposals before the Board of Regents that would apply the more stringent admission standards to resident students beginning in 1990. NAU currently is reviewing its admission standards. It should be noted that NAU currently has the highest admission standards among members of its athletic conference and ranks among the top one-third in admission standards among institutions it considers to be peers.

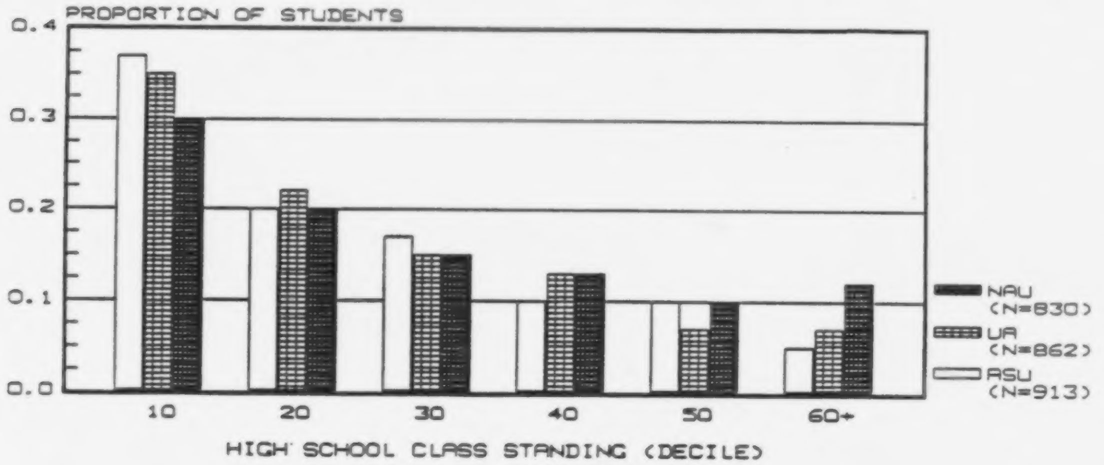
AN ANALYSIS OF FIRST TIME RESIDENT FRESHMN

SOURCE OF INFORMATION

Most of the data for the analysis which follows were extracted from the Board of Regents' Report on the Academic Performance of 1986 Arizona High School Graduates. The report is a legislatively mandated mechanism whereby the universities inform each Arizona high school how its graduates performed during their freshman year at the university. The sample of students used for the analysis includes all freshman students who had provided high school class standing information upon admission; who had graduated from a public high school located in Arizona in the Spring of 1986, and who were enrolled in freshman English during the 1987 Spring semester. When possible, the information was validated by appropriate authorities at the universities. What follows should be considered only as a pilot study. It examines only one entering class. The analysis should be extended to other cohorts of individuals admitted to the universities and a longitudinal analysis should be undertaken to validate the results and to determine changes that may be taking place over time. Studies of this nature are currently underway at all three Arizona universities. It is important to emphasize that this report does not consider transfer students, a very large group, especially at ASU. During Fall, 1986, 46 percent of the 9,454 new students at ASU were transfers.

FIGURE 1

RESIDENT FRESHMEN, SPRING, 1987



ORIGIN OF FIRST TIME FRESHMAN STUDENTS AT PUBLIC UNIVERSITIES IN ARIZONA

The majority of the first time freshmen during the 1986-87 academic year at each of the universities graduated from an Arizona high school (Table 1).

TABLE 1

PROPORTION OF RESIDENT AND NON-RESIDENT 1st TIME FRESHMAN STUDENTS ATTENDING ARIZONA UNIVERSITIES (FALL, 1986)

	Total Number	% Resident	% Non-Resident
ASU	3987	50.3	49.7
UA	4259	62.5	37.5
NAU	1781	70.1	29.9

A substantial proportion are non-resident students, especially at the two larger universities. While the percentages of non-residents may seem large, the figures are misleading. The actual proportion of non-resident students to the total student body does not exceed 25 percent at any of the three universities.

HIGH SCHOOL CLASS STANDING OF 1986-87 RESIDENT FRESHMAN CLASS

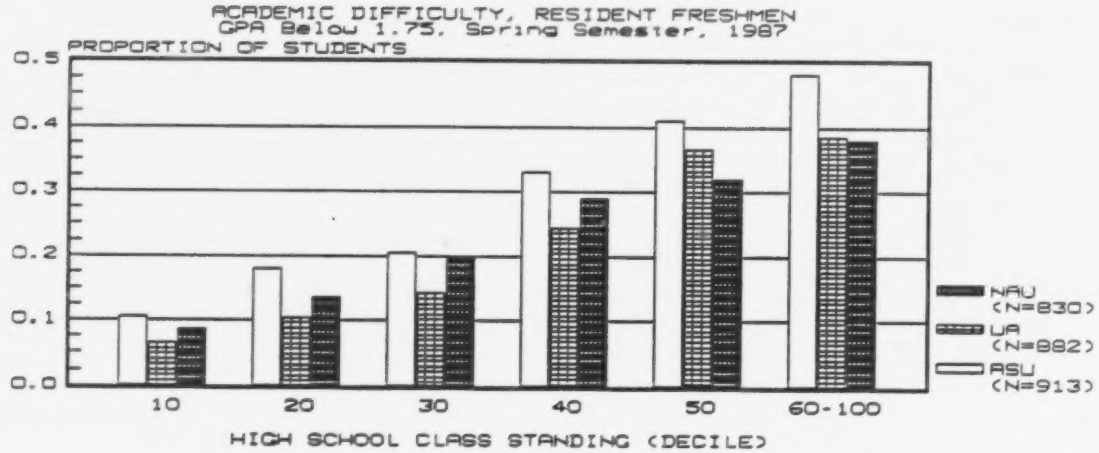
Although the universities routinely admit resident students who rank in the top-half of their high school graduating classes, a substantial majority of the resident students at all three institutions actually graduated in the top three deciles. A relatively small, but not insignificant, proportion of the students are admitted from the lower 50 percent of the graduating class. The latter students enter because of appropriate SAT or ACT scores or via the special admission route (Figure 1).

To the extent that the sample is a true reflection of all resident freshman classes, it appears NAU may be slightly underrepresented by students from the top decile and overrepresented by students from the bottom deciles. ASU and UA are remarkably similar. However, there is a caveat in the database which may result in an underrepresentation of students in the top deciles. Class rank data were unavailable for a proportion of the students at all three universities. Data supplied by UA indicate that those students for whom class rank was not recorded (approximately 20 percent of the total) had on average higher standardized (ACT or SAT) scores than students for whom class rank was recorded and thus may have been from the top deciles. Nevertheless, it is clear that all three universities draw AT LEAST two-thirds to three-fourths of their resident students from the top 30 percent of the high school graduating classes. The majority of students from the lower deciles may be opting for the community college system or are not participating in higher education. Whatever the reason, there is a considerable amount of self selection by Arizona residents as to choice of entry into higher education.

ACADEMIC PROGRESS OF THE 1986-87 RESIDENT FRESHMEN

It is important to determine what proportion of the resident freshmen students experience academic difficulty. Freshmen who do not have a cumulative grade point average above 1.75 after having completed from 14-26 hours are placed on academic warning at the UA, NAU and ASU. For the current analysis we used a grade point average of 1.75 (C-) or less, earned during the second semester of the freshman year, as an indicator of academic problems. The information summarized in Figure 2 suggests that individuals in the top three deciles have a significantly greater chance of academic success at the Arizona universities than do students from the lower deciles. It should be emphasized that by analyzing only spring semester grades, we may be underestimating the number of students in academic difficulty. Many may have dropped out during or following Fall semester.

FIGURE 2



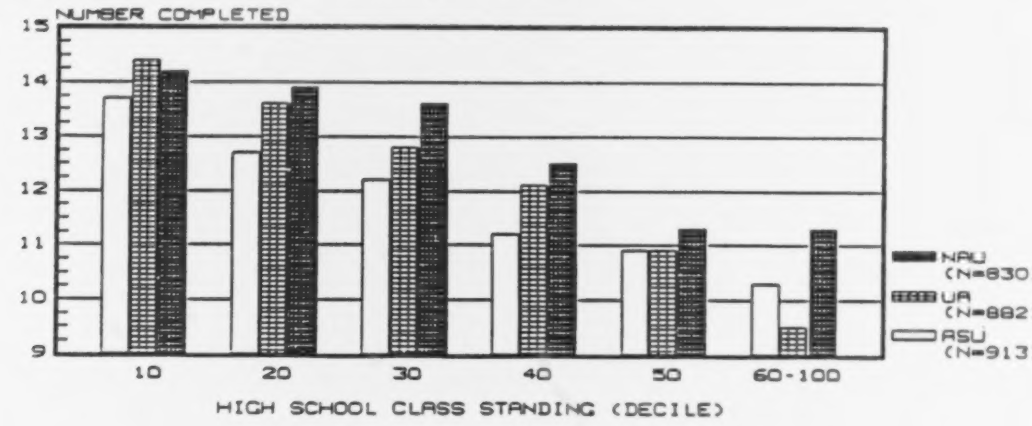
Arizona State University proved to be the most difficult for this particular group of freshman students. Why this should be the case is not clear. What is clear is that a student who graduated in the lower half of his/her high school class has only a 40 to 50 percent chance of completing the freshman year without academic problems and the odds are not much better for students from the fiftieth decile.

It should be emphasized that with this analysis we are dealing with averages and can say nothing about individuals. Many students performed well in high school and yet floundered at the university. Conversely, at least 50 percent of the students who were not known for scholastic achievement in high school proceeded through their freshman year in good standing. By raising admission standards, many students who might have succeeded may be denied the opportunity. However, it is worth remembering that in this analysis we are dealing with only one of three aptitude standards for admission. Nevertheless, it is clear that in terms of academic success rate, the universities would increase efficiency by raising admission standards. But the increased efficiency could be attained only by a possible curtailment of opportunity for some of the less-promising students.

Although it is not the purpose of this analysis to question admission requirements for non-resident students, there are some very interesting and rather peculiar differences between resident and non-resident students in the freshmen class of 1986. Data from the three universities suggest that non-resident, first-time freshman tend to be drawn from a broader spectrum of deciles than do residents. Roughly 50-to 60 percent of all non-resident students were drawn from the bottom seven deciles compared to from 25- to 35 percent of the resident students. Furthermore, non-resident students function much better academically than do resident students. At one Arizona university, fewer non-resident students from the fortieth decile were in academic difficulty than were resident students from the tenth decile. These most curious observations suggest that graduates from high schools outside of Arizona have a greater likelihood of academic success in Arizona universities than do resident students. Why this should be the case is not clear. However, it may be that out-of-state students are more likely to have graduated from what we have referred to as "higher scores" high schools (see later section). What is clear is that data for the two groups should be examined separately when determining university

FIGURE 3

Hours Completed, Resident Freshmen
Spring, Semester, 1987



and Board of Regent Policy.

CREDIT HOURS COMPLETED

Measures of efficiency for a university include not only its student success rate but also its retention rate and how rapidly students proceed toward the baccalaureate degree. A student who is in good standing and completes approximately 16 credit hours each semester will graduate "on schedule" (in four years). Not surprisingly, there is evidence that students who were successful in high school will proceed through the university at a rate that exceeds that of the average or marginal high school student (Figure 3).

Note that in addition to the correlation between high school class standing and hours completed, there are differences among the institutions in the average number of credit hours completed during Spring semester by the resident freshman. Students at ASU from all deciles complete on the average fewer hours than those at UA and NAU, a finding which might be expected. Several investigators have found that students who attend large, public urban universities usually advance toward a degree at a slower pace than students at residential institutions. More students are more likely to attend college on a part-time basis and work at outside jobs while doing so. Table 2 shows the percentage of students registered for 12 or more hours at the three institutions.

As might be expected, ASU accommodates more part-time students than do the other institutions and NAU's status as a residential institution is reflected in the fewest part-time students.

TABLE 2

PERCENTAGE OF STUDENTS REGISTERING FOR 12 OR MORE CREDIT HOURS FALL SEMESTER

	1978	1983	1985	1987
NAU	83.5	86.3	84.2	85.5
UA	83.1	81.2	81.6	82.0
ASU	77.9	77.4	78.0	73.4

An additional complicating factor is that university students often have dual enrollment with a community college. For example, a recent study by the Maricopa Community College District shows that in Fall, 1987, 2,927 ASU students were also enrolled at MCCCD colleges.

How does the rate at which a student proceeds through an Arizona university compare with other postsecondary institutions? Reliable information from other universities is very difficult to obtain. However, we do know from self-reported information that UCLA and UC Berkeley, graduate 55 and 68 percent of their entering freshmen, respectively, in four or five years. Both are Research I Universities, have very high admission requirements and relatively small proportions of transfer and part-time students. The University of Washington, a Research I University with lower admission requirements and a reasonably large transfer population (46 percent of graduates) graduates 42 percent of the entering freshmen within four or five years of entry. In contrast, the California State University System with lower admission requirements (but higher than the Arizona universities) and large numbers of transfer students graduates less than 30% of its entering freshmen in four or five years. The scant data available from the Arizona universities suggest that the fifth year graduation rates for entering freshmen at the UA and ASU are, again, remarkably similar, and range from 37 percent to 40 percent depending on the year. Such information was not available for NAU but will be in the very near future. NAU has launched an ambitious longitudinal retention study. The Office of Institutional Analysis at ASU has followed the graduation rate for the entering class of 1980. Of those students who graduated in the top quartile of their high school class, 45.5 percent received their degree in five years while only 30 percent of those in the second quartile had exited the university with a degree. We conclude that the two large universities in Arizona are graduating students at a rate that is perhaps better than might be expected considering the liberal admission requirements. We also conclude that there is much room for improvement. One could argue that the most efficient and inexpensive method to achieve improvement would be to increase admission standards.

STUDENTS FROM HIGH SCHOOLS DIFFERING IN AVERAGE BASIC SKILL LEVEL

Requiring a certain class standing or grade point average in high school as requirements for entrance to the university has many caveats. More often than not, we may be placing apples and oranges into the same category (decile). Students who graduate in the top 10 percent in one high school are not necessarily prepared as equally for college as students who graduate in the top 10 percent of another school. There are different levels of academic and, perhaps more important, goal-setting development among the highest achievers in high school. Public high schools in Arizona differ significantly in the level of basic skills development of their students. For example, students from high schools located in affluent suburban areas perform on average at a post-high school level on standardized basic skills examinations (Stanford Achievement Test and Stanford Test of Academic Skills) while students from schools located in urban city centers and in some rural areas perform below the national average on the same sets of standardized examinations (Report for Arizona Pupil Achievement Testing, 1987). The majority of our resident minority students graduate from the city center and rural high schools.

Two subsets of students were extracted from the total sample of students: 1. Those who graduated from the ten high schools recording the highest combined average performance on the reading, language and mathematics standardized tests; and 2. Those who graduated from high schools where the performance on one or more of the basic skills tests was below the national average (see Appendix for a listing of the schools). Students from the former schools comprise approximately 24.6, 19.8 and 10.0 percent of the resident freshman student population during Spring semester, 1987, at ASU, UA and NAU, respectively. NAU is overrepresented by students from the latter cohort of high schools, especially from rural schools (Table 3).

TABLE 3

PERCENTAGE OF RESIDENT FRESHMEN COMING FROM HIGH SCHOOLS MARKED BY "HIGHER* VS. LOWER"** SCORES

	ASU	UA	NAU
"higher scores"	24.6	19.8	10.0
"lower scores"			
Rural	3.6	10.6	16.7
Urban	4.5	7.6	3.9

*High average basic skill level.

**Below average basic skill level.

Students from the "lower scores" schools who attend the universities are more likely to be drawn from the top deciles of their high school classes than are their counterparts drawn from "higher scores" schools (Table 4).

TABLE 4

CLASS STANDING OF RESIDENT FRESHMEN FROM HIGH SCHOOLS WITH POST HIGH SCHOOL (HIGH*) AND BELOW AVERAGE (LOW) BASIC SKILL LEVELS**

D E C I L E	ASU H* (256)	L ** (106)	NAU H (92)	L (145)	UA H (247)	L (102)
10	.23	.57	.23	.43	.28	.37
20	.18	.20	.18	.26	.20	.24
30	.20	.11	.14	.14	.17	.14
40	.08	.05	.16	.08	.14	.14
50	.17	.07	.09	.06	.10	.08
60+	.14	.01	.20	.03	.11	.03

We ask the following hypothetical question: If admission standards were increased to include only the top three deciles of the high school graduating class, what would be the impact on students graduating from "higher scores" or "lower scores" high schools? Interestingly, the vast majority of students from "lower scores" schools who chose to enter the universities would have been admitted (Table 5) if the admission had been based solely on high school class standing. However, with the combined aptitude and competency standards, at least one university has found that a large group (14 percent) of the denied students meet aptitude (high school GPA or class standing or standardized test scores) but not competencies (new high school curriculum requirements). Further studies would need to be done to determine whether or not those denied or admitted by exception came largely from "higher scores" or "lower scores" high schools. For reasons that have yet to be determined, students from "lower scores" high schools who graduate in the bottom 70 percent of their class do not seek admission to the universities at a rate comparable to students from "higher scores" high schools and, thus, would not be more negatively affected by the more stringent aptitude requirement. Inspection of Table 5 reveals that many of the students from "higher scores" high schools would not meet the class standing aptitude. While the observation is interesting, it may be misleading. We have not analyzed high school grade point averages or standardized test scores. It might be expected that students from "higher scores" high schools are more likely to be admitted based on standardized test scores than are students from "lower scores" high schools. Clearly, further analysis is needed before firm conclusions can be drawn.

TABLE 5

PROPORTION OF RESIDENT FRESHMEN STUDENTS WHO GRADUATED IN THE TOP 30 PERCENT OF THEIR HIGH SCHOOL GRADUATING CLASS

	TOTAL SAMPLE	"higher scores" High Schools (sub sample)	"lower scores" High Schools (sub sample)
UA	.73	.65	.75
ASU	.75	.61	.89
NAU	.64	.55	.83

IDENTIFYING "AT RISK" STUDENTS

Despite the fact that the majority of the students from "lower scores" high schools graduate in the top deciles of their high school classes, this cohort is at considerably greater risk academically than are their counterparts when they enter an Arizona university (Table 6).

TABLE 6

PROPORTION OF STUDENTS
WITH GRADE POINT AVERAGES BELOW 1.75*
FROM
"higher scores" (high average basic skill level)
AND
"lower scores" (low average basic skill level)
HIGH SCHOOLS

	"higher scores"	"lower scores"
ASU	.22	.39
NAU	.07	.29
UA	.15	.29

*resident freshmen, spring semester, 1987

From 30 percent to 40 percent of the "lower scores" students are experiencing academic difficulty, compared to from 7- to 22 percent of the former cohort. Furthermore, students from city center and rural high schools where the average basic skill level is lower than the national average complete significantly fewer hours per semester than do their counterparts from the "higher scores" high schools (Table 7).

TABLE 7

CREDIT HOURS COMPLETED* BY RESIDENT
FRESHMEN FROM "higher scores"
AND "lower scores" HIGH SCHOOLS

	"higher scores"	"lower scores"
ASU	12.9	10.8
NAU	14.2	12.4
UA	13.2	11.3

*spring semester, 1987

We conclude that a large proportion of students from "lower scores" schools are in academic difficulty at Arizona universities because their academic or social preparation for university success is not sufficient. The literature suggests that to be successful at institutions of higher education, students from disadvantaged backgrounds, especially minority students, require extensive social, economic, and academic support systems (Astin, 1986). Emphasis must be placed on developing those systems in Arizona universities if students from "lower scores" high schools are to successfully participate in higher education.

THE NEED FOR MORE COMPREHENSIVE ADMISSION REQUIREMENTS

While admission requirements usually revolve around such predictors as high school GPA or scores on standardized examinations, more and more universities are recognizing that a student commitment to higher education at entry is centrally related to her/his success at an institution. The unavoidable fact is that college completion requires effort and motivation on the part of the student availing himself or herself of the institution. It is equally clear that some students are unwilling or unable to expend the level of effort required to complete a college degree program. Pace (1980) concluded that the quality of student effort is more closely related to academic outcomes than are background factors which mark student entry into college. Duran (1986) reviewed the research on predicting undergraduate college achievement of Hispanic students. He concluded that high school grades are not a good predictor of success as is the case for white non-Hispanics. Duran outlines several predictors other than GPA or standardized test scores which should be examined when considering Hispanic students for admission. Sedlack (1987) has defined eight non-cognitive variables that predict the grades, retention and graduation rates of Black students. A careful analysis by the Arizona institutions into the more salient characteristics of students who fail and who eventually succeed within their confines would contribute to more rational and comprehensive admissions policies. Improving the likelihood that a student once admitted to the institution will succeed, will depend on a better understanding of the characteristics of the students to be admitted and the commitment of the university to the task of educating the student once she or he has been admitted.

THE NEED TO CONSIDER OPTIONS FOR ARIZONA RESIDENTS

It is worth emphasizing that there are relatively few options for higher education in Arizona compared to most states. Only three public, four-year institutions are currently in place. Contrast this to Colorado, a state of comparable population, where 14 four-year colleges or universities exist. Arizona resident students have few choices and it is clear that many students who may not meet the new admission requirements set by the universities actually would succeed if given the opportunity. It may well be that the benefits accrued from developing talent of marginal students may exceed the costs incurred by those who fail in the system.

THE NEED TO ASSESS THE IMPACT OF ADMISSION STANDARDS IMPLEMENTED IN 1987-1988

As previously stated, more rigorous admissions standards were implemented for all students entering the universities during the Fall of 1987 and for non-residents entering Fall, 1988. Unfortunately, it is too early to assess the impact of those admission requirements on student success. It would seem reasonable that before considering an additional increase in admission standards for resident students, it would be advisable to examine the impact of the new initiatives already in place. We applaud the efforts of the Advisory Committee on Assessment of the Impact of the 1987 Admission Requirements to establish a set of common data elements which the admissions offices of the three universities will collect for future studies. More rational admission requirements can be forthcoming by more careful data collection and analysis. As suggested by the advisory committee, questions that need to be addressed include:

1. What has been the impact of the admission requirements on minority enrollments?

2. What will be the impact of the new requirements on enrollment trends at the universities?

3. What has been the performance of students admitted with deficiencies and what programs have been most successful in assisting students with deficiencies?

4. What has been the overall success of students admitted in the Fall of 1987 and thereafter, compared with the students in the current analysis?

We would add to the list the following questions:

What are the most successful programs in increasing minority access to higher education?

How is the success of such programs measured?

CONCLUSIONS

1. Efficiency at Arizona universities, as measured by retention, rate of completion, and student success would probably be increased by raising admission standards for resident students.

2. Students from "lower scores" high schools are at greater risk academically than are students from "higher scores" high schools despite their higher overall standing in high school graduating classes.

3. Attempts to improve the overall quality of the student body are not rewarded by the current funding system and, thus, the goals of the new admission requirements may be jeopardized.

RECOMMENDATIONS

- The universities should assess the impact of admission standards implemented in 1987 and 1988 on minority enrollment and student success.

- ASU and UA should gradually increase admission requirements for resident students to match those of non-resident students provided that it can be demonstrated that the new requirements will not impede access of qualified students from " lower scores" high schools.

- To increase the probability that the desired changes will be achieved by the new admission standards, the State Legislature and the Regents should examine mechanisms that will insure that the universities will not lose funding during years of enrollment declines.

- The universities' admission policies should be widely distributed to potential participants in higher education. A comprehensive plan for disseminating information about new admission requirements should be developed and implemented with generous lead time for students at appropriate grade levels. Students can then rationally choose the institution where the chance for success is optimized.

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APPENDIX

Ten Arizona public high schools where students score highest, on average, on standardized examinations of basic skills (language, reading and mathematics).

- Arcadia
- Chaparral
- Gilbert*
- Sabino
- Sahuaro
- Canyon Del Oro
- Dobson*
- Horizon
- Saguaro
- University

*Gilbert and Dobson were selected by lottery from a relatively large group with similar test results in order to bring the number to 10. The remaining 8 schools were the clear leaders, followed closely by the cohort including Dobson and Gilbert.

Arizona public high schools where students on average scored below the national average on one or more of the standardized examinations of basic skills (language, reading and mathematics).

- Ajo
- Alchesay
- Antelope
- Ash Fork
- Baboquivari
- Bagdad
- Bisbee
- Bradshaw
- Buckeye
- Carl Hayden
- Casa Grande
- Chinle
- Cholla
- Coolidge
- Douglas
- Dysart
- Florence
- Fort Thomas
- Ganado
- Glendale
- Globe
- Hayden
- Holbrook
- Kingman
- Kofa
- Many Farms
- Maricopa
- Mayer
- Miami
- Monument Valley
- Morenci
- Nogales
- North
- Page
- Patagonia
- Payson
- Pueblo
- Red Mesa
- Salome
- San Manuel
- Santa Cruz
- South Mtn.
- Sunnyside
- Superior
- Tolleson
- Trevor Brown
- Tuba City
- Willcox
- Williams
- Window Rock
- Winslow
- Yuma

ROLE OF TEMPORARY FACULTY IN UNDERGRADUATE EDUCATION AT THE THREE ARIZONA UNIVERSITIES

GEORGE H. DAVIS, MARY J. TALBOTT AND KRISTIN L. CETONE

ABSTRACT

The expression "temporary faculty" refers to college and university instructors who are neither tenured or tenure-eligible, and whose responsibilities do not include research and public service. Temporary faculty may be full-time or part-time. Universities have come to rely on temporary faculty to teach certain kinds of courses, including many entry-level basic skills courses. The use of temporary faculty gives universities the flexibility to address unstable enrollments and shifting program demands. Data provided by the National Center for Educational Statistics reveal that temporary faculty now comprise 32% of the total teaching force in higher education, nationwide.

No one has persuasively shown that temporary instructors teach with less effectiveness than regular faculty (Gappa, 1984). Yet it is clear, nationwide, that the conditions of employment of temporary faculty are often limiting to exploitative, and this affects the quality of the educational experience that can be provided to students.

Temporary faculty are typically poorly paid and are provided with very little job security and support. They generally have second-class status but put up with it out of personal satisfaction, economic necessity, or aspirations for a regular faculty position.

The conditions of employment for temporary faculty in English and Mathematics at the three Arizona universities are in some ways as discouraging as that reported nationwide. The University of Arizona has established reasonable and equitable salary levels for temporary instructors in English and Mathematics, and has made substantial resource commitments overall. The Mathematics Department for example is a model program. Not withstanding, the back-up support for temporary instructors in the English Department at the University of Arizona appears to be the most inadequate of the departments interviewed. Three to four instructors share desks in overcrowded "bullpen" offices; and departmental secretarial support and supplies are generally not available to them.

The compensation for temporary instructors at Arizona State University and Northern Arizona University, approximately $1500 per course, is well

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below the national average of $2,691 per course (Gappa, 1984). At Northern Arizona University, temporary instructors teaching at night through Continuing Education have been paid approximately $1100 per course, which is less than the $1500 paid to temporary instructors teaching the same course during daytime hours. The combination of salary and load for some temporary faculty in the English Department at Arizona State University is professionally unacceptable: there are faculty teaching five courses per semester at $1500 per course, while at the same time teaching additional courses (two or three!) at night for community colleges.

On all three campuses, "The money is not there when it is needed:" Failure to commit resources to department heads in Mathematics and English in March or April reduces significantly the value and purchasing power of the dollars that are actually committed and received late in the cycle. Furthermore, the long wait imposes on temporary instructors a level of uncertainty and insecurity that is entirely unreasonable.

As a consequence of all these factors, it is fair to conclude that students enrolled in entry-level English and Mathematics at the Arizona universities cannot be receiving the quality of instruction they should consistently expect to receive.

BACKGROUND

Universities around the country have found that it is neither cost effective nor in the best programmatic interest of the institution to require tenured or tenure-eligible faculty alone to teach all of the courses that are offered to undergraduate students. As a consequence, universities have come to rely on temporary instructors to teach certain kinds of courses, including many entry-level basic skills courses. The use of temporary faculty gives colleges and universities the flexibility required to address unstable enrollments and shifting program demands. Colleges and universities can provide competent instruction by temporary faculty at between 50% and 80% of the direct costs of comparable instruction by regular faculty. If temporary faculty were to work at the same pay as regular faculty there would be serious budget deficits (Gappa, 1984).[1]

Data provided by the National Center for Educational Statistics reveal that temporary faculty now comprise 32% of the total teaching force in higher education, nationwide. Approximately 24% of faculty serving four-year colleges are temporary. Twenty percent of the faculty at research universities are temporary. Fifty-three percent of faculty at two-year colleges are temporary! In light of these data, "The idea that the employment of [temporary faculty] is a casual departmental affair rather than a planned institutional effort is obsolete" (Gappa, 1984).

Gappa (1984) reports that no one has persuasively shown that temporary instructors teach with less effectiveness than regular faculty. Yet it is clear, nationwide, that the conditions of employment of temporary instructors range from limiting at best to exploitative at worst, and this affects the quality of the educational experience that can be provided to students. Gappa (1984) reports that they are poorly paid and are provided with very little job security and very little support. They generally have second-class status but put up with it out of personal satisfaction, economic necessity, and/or aspirations for a regular faculty position.

APPROACH

The premise of this study is that the quality of the overall education experience of students taught by temporary instructors relates importantly to the care with which the instructors are recruited, trained, and evaluated, and the level at which they are supported and compensated. We chose to examine the role of temporary faculty in the English and Mathematics departments at each of the three universities. The English and Mathematics departments were singled out because they employ a relatively large number of temporary instructors, and because all undergraduates are served by these departments at some time during their academic careers. We met with department heads and program coordinators in each of the six departments, and then met separately with temporary faculty members employed by each of the departments, except for English at Northern Arizona University.

HIRING PRACTICES

Even though the overall needs for temporary instructors in English and Mathematics do not vary significantly from year to year, the department heads are kept waiting for firm commitments of funding with which to hire instructors. Some funding is generally committed in late spring or early summer, but commonly it is not made available until quite literally the last minute. The earlier that funding is committed by administration, the more a given department head can succeed in hiring the best possible instructors available. For a university like Northern Arizona University, situated in a small city where the pool of available qualified temporary instructors in English and Mathematics is very limited, last-minute approval of funding can be devastating. But even for University of Arizona and Arizona State University, situated in large cities, the late and last-minute approvals of funding are damaging. It increases the workload and frustrations of department heads and associate department heads who, throughout winter, spring, and summer, continuously try to keep the interest and confidence of temporary instructors they wish to hire. And it obviously casts greater uncertainty and insecurity into the lives of individuals who have served well as temporary instructors and who are awaiting confirmation that they will be rehired. Even highly successful, showcase entry-level programs, like the Mathematics program at The University of Arizona, are unable to hire early because of the lateness of budget allocation commitments by administration. Recruitment of temporary instructors is generally derived from a local pool of qualified individuals who keep in close contact with department heads and/or program coordinators. Some are former graduate students; some are spouses of regular faculty; some are high school teachers; all are dedicated teachers who enjoy their subject and either have masters or doctoral degrees. For reasons described above, many are hired at the last minute, even during registration week or the day (or day after) classes begin. Department heads and/or program directors do the hiring, although in some cases, such as the Department of Mathematics at The University of Arizona, a faculty personnel committee reviews the applications and makes recommendations.

TRAINING AND ORIENTATION

Although graduate teaching assistants in Mathematics and English in each of the three universities are provided with significant orientation and training at the time of hiring, and are supervised during each semester of teaching, the temporary instructors are given no formal orientation or training. The level and quality of orientation, instruction, and training depend upon what is provided by the department head and/or program director in one-on-one discussion. Generally the temporary faculty member receives a syllabus, a textbook, a class roster, and a classroom assignment. There is a reluctance to provide orientation because the temporary faculty are trained professionals, and because the department heads and/or program directors recognize how little the instructors are paid and do not wish to obligate them to additional time commitments.

OPERATIONAL SUPPORT

Operational support for temporary instructors is, by and large, inadequate. Temporary instructors in the English Department at The University of Arizona appear to be most inadequately supported. Departmental secretarial support is not available to them, and they pay out of their own pockets to purchase basic materials. They are given a limit of five Xerox copies per day, from which dittos can be generated. Three to four instructors share desks in overcrowded "bullpen" offices, and this is where they meet with students during office hours. Operational support for temporary instructors in the Mathematics Department at The University of Arizona is, in contrast, much more satisfactory. The instructors have their own offices (good conditions, although several blocks removed from the math building), and they receive departmental secretarial and Xerox support. At Northern Arizona University and Arizona State University, sharing of offices is the rule (two to an office), departmental secretarial support is generally available, and a modest Xerox budget is provided.

PERFORMANCE EVALUATION

Temporary instructors are evaluated each semester through a student-evaluation instrument. The results are made available to the instructors, although no discussion of the evaluation takes place between the department head/program coordinator and the instructor. Although some of the instructors would say they benefit from the evaluations, the evaluations have no bearing on salary adjustments because compensation is so commonly based on a fixed per-course fee (by department) that has not changed for a number of years. Department heads and/or program directors review the evaluations, especially if students have complained about the instructor or the course during the semester. Temporary instructors at Arizona State University believe that the student evaluation instrument is one that simply explores for gross problems that constitute professional irresponsibility (e.g., does the instructor show up for lecture?).

SALARY COMPENSATION

Salary compensation for temporary instructors varies from university to university, and at The University of Arizona it varies from department to department. Compensation for temporary instructors at Northern Arizona University varies depending on whether the course is taught by day or by night.

Temporary instructors in english composition at Arizona State University receive $1500/section, $1800 if they have a PhD. These instructors do not receive any benefits unless they teach five courses per semester for two semesters each year. Those that choose to teach "5 and 5" do so with the understanding that they will stand a better chance to be rehired the following year. In the Mathematics Department at Arizona State University, compensation per credit unit is the same as for English, but there is no opportunity for benefits. All temporary faculty are limited to 49% employment. At the University of Arizona, compensation for temporary instructors in english composition is $2300/section. Full-time temporary instructors in the Department of Mathematics at The University of Arizona receive $20,000/year, plus benefits. At Northern Arizona University, temporary instructors teaching at night through Continuing Education have been paid approximately $1,100 per course, which is less than the $1,500 paid to temporary instructors teaching the same course during daytime hours. This holds for both Mathematics and English.

Temporary instructor salaries at Northern Arizona University and Arizona State University are significantly below the average salary rate for temporary instructors per course at universities nationwide: $2691 (Gappa, 1984). Even the $2300/course and $2500/course salary rate for temporary instructors in English and Mathematics at The University of Arizona is below the mean. The salary rate for graduate-degree holding temporary instructors at Arizona State University is exacerbated even further in the English Department, where the course load is, in some cases, beyond reason. There are instructors teaching "5 and 5" who are also teaching up to three courses at a community college. Each ASU english composition course serves twenty-seven students who write ten papers/term. Thus, the ASU grading load alone for a temporary instructor on "5 and 5" is 1350 papers per term. Allowing 30 minutes per paper, these "human grading machines" spend (or should spend) 675 hours per term just grading papers, not counting class preparation, office hours, and lectures.

CONCLUSIONS

The conditions of employment for temporary faculty in English and Mathematics at the three Arizona universities are as discouraging as that reported nationwide. Even though Mathematics and English are described by the Board of Regents and the universities as high priorities in undergraduate education, the resources have not always followed. Operations dollars invested are generally minimal. Temporary instructors in the English Department at The University of Arizona appear to be most inadequately supported. Three to four instructors share desks in overcrowded 'bullpen' offices; departmental secretarial support and supplies are not available to them. Although the University of Arizona has established reasonable and equitable salary levels for temporary instructors in English and Mathematics, and have made substantial resource commitments overall, the salaries for temporary instructors at Arizona State University and Northern Arizona University are below reasonable level. Salary and load, especially when viewed together, are exploitative in the English Department at Arizona State University. Some temporary faculty at ASU teach five courses per semester at $1500 per course, while at the same time teaching additional courses at night at community colleges. At Northern Arizona University, salaries for temporary instructors teaching at night are significantly less than that for temporary instructors teaching the same course during daytime hours.

On all three campuses, "the money is not there when it is needed": Failure to commit resources to department heads in March or April reduces significantly the value and purchasing power of the dollars that are actually committed and received late in the cycle. Furthermore, the long wait imposes on temporary instructors a level of uncertainty and insecurity that is entirely unreasonable. As a consequence of all these factors, it is fair to conclude that our undergraduate students cannot be receiving the quality instruction that is possible, the quality of instruction they should consistently expect to receive in the basic skills areas of English and Mathematics.

The conclusions reached by Gappa (1984) based on her national survey also apply to Arizona: "Institutions should replace freewheeling departmental autonomy with centralized responsibility and accountability for [temporary faculty] employment to ensure fair and humane treatment."

RECOMMENDATIONS

- Each university should examine the conditions of employment of temporary faculty in departments marked by heavy-enrollment service loads, paying special attention to recruitment practices, training and orientation, work load, compensation, benefits, departmental support, and performance.

- Policy guidelines should be developed that ensure that the conditions of employment of temporary faculty are consistent with institutional goals of delivering quality instruction to undergraduates.

- Modify institutional budgeting practices in such ways to permit most temporary faculty and graduate teaching assistants to be hired at least four months before the start of a given semester.

- Develop planning and recruiting practices that minimize the use of part-time temporary faculty, in favor of greater use of full-time temporary faculty and graduate teaching assistants.

ENDNOTES

[1] Gappa, J. M., 1984, Part-time faculty: higher education at a crossroads: ASHE-ERIC Higher Education Research Report #3, Association for the Study of Higher Education, Washington, D.C., 109 pages.

TEMPORARY FACULTY IN THE ENGLISH AND MATHEMATICS DEPARTMENTS AT THE ARIZONA UNIVERSITIES

MARY J. TALBOTT, GEORGE H. DAVIS AND KRISTIN L. CETONE

INTRODUCTION

How can institutions effectively employ part-time faculty? How many of the introductory courses should be taught by nonpermanent faculty? Can institutions alleviate the problems associated with employing large numbers of temporary faculty? What is the impact of temporary teachers on student learning? How can we measure that impact? Is it necessary to continually hire part-time (temporary) faculty to meet routine teaching needs in a department?

OVERVIEW

Temporary faculty in the Mathematics and English Departments at each of the three Arizona universities were the focus of this study. The literature on part-time faculty and institutional policies were reviewed. Department level personnel management practices were identified through a series of interviews with departmental heads and/or coordinators in each of the six departments, and with select part-time and full-time faculty.

Finally, information was collected on the courses taught by temporary faculty during the Fall of 1987 and Spring 1988 semesters.

Overall, approximatety fifteen percent of all teaching is done by part-time faculty (Gappa, 1984). The National Center for Education Statistics reported that by 1983, thirty-five percent of all faculty were part-time and it is estimated that in 1986 part-timers constituted thirty-seven percent of all faculty (Digest, 1987). Part-time faculty are not distributed evenly across institutional types: fifty-three percent were in two-year colleges, thirty-four percent were in four-year colleges, and thirteen percent were in universities (Gappa, 1984). Nor are part-time faculty employed at the same rate across all disciplines.

To complicate the situation further, there is no single, accepted definition of part-time faculty, and information bearing on these individuals is not routinely or systematically collected at the national, state or local level.

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Kristin L. Cetone is an Administrative Assistant at The University of Arizona. Her interests have focused on education since completion of her studies at The Ohio State University. Her experiences encompass the instruction of children and adults, to curriculum planning, to involvement in quality of working life of staff. She has significantly contributed to the solution to the formula: Administration + Students + Faculty + Staff = The university system and the realization of its mission and goals.

Conventional wisdom is that temporary faculty are employed because they provide the institution with a substantial amount of flexibility and quality instruction at a lower cost. It is also generally suggested that this group undermines the quality of education and threatens the role of tenure/tenure-eligible faculty in decision and policy making (Gappa, 1984).

Research on the effectiveness of part-time faculty has been inconclusive. Leslie, Kellams and Gunne (1982, p. 16) concluded that there is "wide variation in the quality of instruction as provided by part-timers; at the very least we can probably generalize to the extent of saying that the quality of instruction by part-timers is less dependable."

Our pilot study focused only on two departments with large service obligations, partly because of the centrality of their activities to undergraduate education. We believe we have discovered some important insights into the effective utilization of part-time faculty. But in order to accurately and fully address the questions posed at the outset of this report one would need comprehensive data about such things as the use of part-time faculty, the demographics of the part-time faculty, policies and practices, the impact of part-time faculty on student learning, the different functions of part-time faculty within the institution and the impact on the organization.

As a result, then, we make the following overarching recommendations:

1. that each institution undertake a comprehensive study of the use of part-time faculty and the impact on student learning,
2. that the data collected be transformed into information that is easily accessible and widely distributed, and
3. where necessary, policies and management practices should be restructured to insure the employment of part-time faculty is effective, efficient, and just.

BEYOND COMPENSATION

If we are to constructively employ part-time faculty, institutions must go beyond establishing reasonable compensation, benefits, policies, workloads and administrative support. Part-time faculty must be integrated into their respective departments. To become part of the whole, integration, may mean participating in select decisions, having routine and systematic input into matters relating to their respective courses, participating with permanent faculty in faculty development and sharing in the rewards and recognition available. Whatever methods are designed, departments will need to impart a sense of value and respect for the work of part-time faculty if the problems associated with employing part-time faculty are to be overcome.

METHOD

This study focused on two departments, Mathematics and English, at each of the three Arizona universities. These departments were selected because they provide instruction to almost all of the undergraduates at some time during their academic careers.

Demographic information on temporary faculty was provided by each institution for the Fall 1987 semester. This information was verified by the department heads and formed the basis for the profiles contained in the text. Additionally, information about the assignments of temporary faculty and graduate teaching assistants/associates was obtained for the 1987-88 academic year. Using the latter information, we identified where the greatest impact on teaching program existed.

Institutional policies were analyzed using the appropriate handbook from each institution as well as the Arizona Board of Regents' Conditions of Faculty Service. Policies on hiring, compensation, benefits, orientation, evaluation, rehire and assignment were reviewed.

A third major component of the study was a series of interviews with department heads and/or coordinators, temporary faculty, graduate teaching assistants/associates and permanent faculty. Each of the six department heads and/or coordinators was interviewed in a structured interview that lasted approximately one hour to an hour and a half. Notes were taken during the interviews and analyzed for themes. Temporary faculty were interviewed in five departments and permanent faculty were interviewed in four of the six departments. No faculty, temporary or permanent, were interviewed in the English Department at NAU because we made a scheduling error. Graduate teaching personnel were included in two interview sessions, one with temporary faculty and one individual session. All of the faculty, temporary and permanent as well as the graduate teaching assistants were interviewed in groups. The part-time faculty groups were small, consisting of 2, 3, 5, 6 and 10 persons. Likewise, the four permanent faculty groups were very small. Notes were taken during the 90 minute sessions. Fifteen of the sixteen interviews were taped, but because of time and resource limitations, the tapes were not transcribed.

There are several methodological limitations.

First, the results cannot be generalized to other areas of the institution because conditions, employment practices and the role(s) of temporary faculty may be drastically different.

Second, the use of groups to obtain information from temporary and full-time faculty instead of individual interviews is problematic because group opinions may have prohibited individuals from expressing controversial views and from speaking out on sensitive issues. Additionally, because the academic year had ended, our sample was one of convenience; therefore we may not have identified the full range of issues and concerns with respect to the employment of part-time faculty. Due to these limitations, although many of the themes and findings parallel those identified in the literature on part-time faculty, they must nevertheless be regarded as preliminary.

WHO ARE THE TEMPORARY FACULTY?

DEFINITION

The answer to the question, "Who are the temporary faculty?" is not an easy one. First, there are individuals from the community who teach one or two courses during the semester. Second, there is a group that works full-time (teaching) on a temporary basis, teaching three, four or five courses per semester on a year-to-year basis. Finally, temporary faculty might include individuals brought in from other universities to

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fill positions temporarily vacated because of sabbaticals and other leaves. While this latter group could be classified as temporary faculty, they typically have very different concerns, career paths and qualifications. These visitors are usually tenured faculty at other institutions who come for a prespecified period of time and then return to their home institution to resume their normal range of faculty duties. Their salaries are usually significantly higher than individuals in the first two groups. Although this study focused primarily on the first and second groups of temporary faculty, some information about this third group is included and will be identified accordingly.

We selected the term temporary faculty because we wanted to begin to understand the employment of "other than permanent personnel" with respect to the teaching mission. Early in our discussions with department heads it was realized that the term "part-time" temporary faculty was often associated with those individuals teaching one or two courses and "full-time" temporary was used for the group teaching a full-time load on a nonpermanent basis. The term part-time faculty in the literature encompasses both types of temporary personnel. Gappa (1984, p. 5) defined part-time faculty as: "anyone who

(1) teaches less than the average full-time teaching load, or

(2) has less than a full-time faculty assignment and range of duties, or

(3) may have a temporary full-time assignment."

Because differences were often noted between those employed under Gappa's first and third categories, the term part-time will be used to identify those in category 1 while those in category 3 will be referred to as full-time temporary.

For the purpose of this study, when the term temporary faculty is used it will denote all members of the nonpermanent, nontenurable faculty exclusive of visitors from other institutions.

FACULTY TITLES

A range of titles is used to identify temporary faculty both within and between institutions. At Arizona State University the temporary faculty in the two departments are called "Faculty Associates". The Arizona State University Academic Affairs Policies and Procedures Manual (1986, ACD 111-2) lists the following faculty ranks: professor, associate professor, assistant professor, and instructor are the traditional academic ranks; lecturer and senior lecturer are reserved for individuals whose primary responsibility is teaching undergraduate or clinical courses; visiting faculty (visiting professor, visiting associate professor, visiting assistant professor or visiting instructor) is reserved for individuals from other institutions who will be returning to their home institution; clinical faculty are persons who direct or participate in specialized university functions; adjunct faculty are individuals whose academic rank (instructor or above) will carry the prefix adjunct. They generally receive no salary and receive the appointment because it benefits both the institution and the individual. The term faculty research associate is reserved for individuals with advanced degrees and who are employed on a research grant or contract. "Faculty associates are persons qualified by training and experience to teach university level courses; they may be doctoral students who have completed all degree requirements except the dissertation" (ibid.). Finally, the title post-doctoral fellow applies to an individual who has earned a doctorate and is employed temporarily by a faculty member to conduct research.

The "Conditions of Faculty Service" (Chapter VI, Rev. 3/02/87) and ASU policy specify that the number of lecturers and senior lecturers may not exceed 4 percent of the tenure-track and tenured faculty. No such limitation is included for the number of faculty associates which is the title used for the part-time and full-time temporaries in the English and Mathematics Departments.

The Northern Arizona University Faculty Handbook lists the same regular faculty titles (professor, associate professor, assistant professor, and instructor), visiting faculty titles, and adjunct faculty titles. The rank of instructor is an annual appointment, not normally eligible for tenure. "Clinical faculty titles (clinical professor, clinical associate professor, clinical assistant professor, and clinical instructor) are possible in the health professions." NAU also has the titles of research fellow and visiting scholar available. Lecturer is another possible title but is defined a little differently than at ASU. At NAU the latter title--lecturer--is defined as "persons holding or having held rank at a college or university or having a record of distinguished professional training or experience in a field other than teaching who are temporarily appointed as lecturers in teaching or research positions" (NAU Handbook, Chapter 2-1, p.1). Lecturers "cannot accrue time toward stability of employment or sabbatical leave" (ibid.). The titles used for full-time temporaries and part-time faculty in the two participating departments are instructors and part-time instructors respectively.

The University of Arizona faculty titles include the aforementioned regular faculty titles. The adjunct faculty title is given to a distinguished individual from another academic department or outside organization. While these positions are normally without salary, when a department has a need for temporary faculty because of teaching demands the salary for the semester or year is based on the course load. The visiting titles are used as previously mentioned. The instructor title is reserved for someone with a terminal degree or actively pursuing a terminal degree. He or she must show promise in the applicable area. This appointment may not be renewed more than three times whether successive or not if tenure-eligible. If nontenure-eligible, an indefinite number of renewals is possible. Clinical faculty are employed in a clinic as a clinician, either at a medical or service clinic on main campus and are non-tenure eligible. The titles teaching associate and teaching assistant are also possible at the University of Arizona. The teaching associate is defined as a "Temporary teaching position that is a year-to-year appointment. Usually teaches lower division courses on a part-time or full-time basis. Qualifications are above minimum level required by the discipline. Responsibilities are for teaching only. The position does not have research or public service assignments" (Draft, University of Arizona, 1988). The definition of the teaching assistant differs only in the description of assignment and qualifications: "Usually teaches lower division courses, skills courses or laboratory techniques courses. Qualifications are at the minimum level acceptable for the discipline" (ibid.). Finally, the title lecturer is reserved for individuals whose primary responsibility is for teaching and who have above minimum qualifications for teaching in the discipline. These individuals are expected to teach lower or upper division courses and conduct some academic research. The initial appointment is non-tenure eligible; however, "appointment from the rank of instructor or assistant professor may be made with tenure (ibid.)."

At the University of Arizona the part-time and full-time temporaries, excluding faculty from other colleges and universities, are called teaching assistants and adjunct lecturers in the English and Mathematics Departments respectively.

OTHER CLASSIFICATIONS

Beyond the categories listed above, Tuckman (1978) developed a taxonomy of part-timers that is based on their reasons for becoming part-time employees. In using this taxonomy, the author provided significant insights into the characteristics and work history of part-timers. Tuckman's seven categories of part-timers are as follows: the semiretired, students, those wishing to become full-time (Hopeful Full-Timers), those with a full-time job (Full-Mooners), those with responsibilities in the home (Homeworkers), those with another part-time job (Part-Mooners), and all others (Part-Unknowners). During the course of our interviews with temporary faculty we encountered individuals in all but the student category. That is, none of the individuals we interviewed were employed at institutions other than the one in which they hoped to obtain a degree. Information was not collected using Tuckman's classification because of the small samples available. Not surprisingly, differences in concerns and issues were noted between Hopeful Full-Timers and Full-Mooners. For this reason, and others previously noted, each institution is urged to conduct a comprehensive study of temporary faculty.

The AAUP (1978) identified three kinds of full-time non-tenure track appointments: the indefinitely renewable, the limited renewable, and the folding chair. The last type of appointment is one in which the initial appointment is explicitly terminal. That is, after the two or three year initial appointment no renewals are possible.

In summary, the temporary faculty is comprised of at least two subgroups at each of the institutions--part-time and full-time temporary faculty. Within each of the two groups further distinctions are possible. Tuckman's seven categories of motivation and the AAUP's differentiation between types of appointments provide additional insights into this ever increasing, yet often silent, group in higher education.

CHARACTERISTICS OF TEMPORARY FACULTY AT ARIZONA STATE UNIVERSITY

In the Mathematics Department twelve persons were listed as temporary faculty for Fall 87 semester. Four of the twelve had visiting professor , associate or assistant professor titles; the remaining eight were titled faculty associate. Nine of the twelve were male and six of the eight faculty associates were male. Two of the twelve were Asian; the remaining persons were white. The number of years worked by the faculty associates ranged from less than one to ten years with a mean of 2.75 years.

The English Department at ASU employed thirty-three temporary faculty members for Fall 1987. All but three had the title faculty associate. One individual had a title of adjunct professor, received no salary and taught no classes. The remaining two had the titles lecturer and lecturer invitational. Twenty-two of the thirty faculty associates were female and all but one was White. The number of years worked ranged from less than one to ten with a mean of 2.6 years for faculty associates. Nine of the faculty associates were employed 100 percent full-time equivalent. These individuals had a teaching load of fifteen hours each semester (five three-credit classes).

CHARACTERISTICS OF TEMPORARY FACULTY AT NORTHERN ARIZONA UNIVERSITY

The Mathematics Department employed twelve temporary faculty for Fall 1987. Three of the twelve were full-time temporaries. Five of the twelve were female, but none of the full-time temporaries were female. All of the part-time faculty were White. The number of years worked for the part-time faculty ranged from less than one to four years, with a mean of 1.4 years. Information on race/ethnicity was not available for full-time temporaries.

In the English Department, seventeen part-time and two full-time temporaries were employed during Fall 1987. Nine of the seventeen part-timers were male; one of the full-time temporaries was male. One individual was Hispanic and the remainder were White. The number of years worked by the part-time faculty ranged from less than one to eight with a mean of 1.8 years. Both of the full-time temporaries had been employed for three years on limited renewable contracts.

CHARACTERISTICS OF TEMPORARY FACULTY AT THE UNIVERSITY OF ARIZONA

The University of Arizona English Department employed forty-one temporary faculty for the Fall 1987. Six of the forty-one had titles other than teaching assistant. Those titles included visiting professor (1) , adjunct associate professor (2), adjunct assistant professor (1), adjunct lecturer (1), and lecturer (1). Four of the aforementioned six were 100 percent FTE. Nine of the remaining thirty-five faculty assistants were 100 percent FTE. Twenty-three of the forty-one were female. Data on race/ethnicity was not readily available. The number of years worked for teaching assistants ranged from less than one to ten years with a mean of 3.5 years.

The University of Arizona Mathematics Department employed thirty temporary faculty for Fall 87. Three of the thirty were titled visiting assistant professors; the remaining twenty-seven were called adjunct lecturers. Fifteen of the twenty-seven adjunct lecturers were male and eleven of the twenty-seven were 100 percent FTE. The number of years worked by adjunct lecturers (both part-time and full-time) ranged from less than one to twelve years with a mean of three years.

In summary, more than half of all temporary faculty in these six departments during Fall 1987 were women. In contrast NCES (Digest of Education Statistics, 1987) reported that in 1983 approximately seventy-two percent of all full-time permanent faculty were male. Although the data on race and ethnicity were incomplete, data from four departments suggest the temporary faculty are predominantly White, non-

Hispanic. The 1983 profile of full-time faculty identified approximately ninety percent of all full-time faculty as White, non-Hispanic (ibid.).

WHAT DO THEY TEACH?

At Arizona State University the faculty associates in the English Department taught ninety-seven courses during Fall 1987 and one-hundred-twelve during Spring 1988. Of the two-hundred-nine courses, one-hundred-thirty-six were freshman (100 level) courses and an additional twenty-two were sophomore (200 level) courses. During the same period, all but seven (headcount) of the one hundred twenty-eight graduate teaching assistants/ associates (headcount) were assigned to lower division (100 and 200 level) courses. These figures do not include the courses taught by either adjunct or visiting faculty.

Within the Mathematics Department at Arizona State University the picture is different. Faculty associates taught twelve courses during Fall 1987: eleven at the sophomore (200) level and one at the senior (400) level. During Spring 1988 all ten courses taught by faculty associates were at the sophomore (200) level. During the same period all of the graduate teaching personnel were assigned to lower division (100 and 200) courses.

Turning to Northern Arizona University, one finds a concentration of effort by the full-time temporary and part-time faculty in the Mathematics Department on entry level courses. Identified as either instructors or part-time instructors, the temporary faculty employed during the 1987-88 academic year taught forty-nine freshman (100) level classes and three sophomore (200) level classes. Graduate assistants were assigned to freshman (100) level coursed during this period.

Data were not available from the English Department at Northern Arizona University.

Finally, the University of Arizona English Department temporary faculty, including those with other than the teaching assistant title, taught a total of one-hundred-twenty-three classes during the two semesters: Seventy-nine of the classes were freshman (100) level, eleven were sophomore (200) level classes, ten were at the junior (300) level, thirteen at the senior (400 level and ten at the graduate level.

In the University of Arizona Mathematics Department the temporary faculty including the three visiting assistant professors taught fifty-seven courses during the Fall 1987 semester. Fifty of the fifty-seven were freshman (100) level, six were sophomore (200) level and one was a junior (300) level course. During Spring 88, the temporary faculty taught fifty-one courses: forty-four at the freshman (100) level, three at the sophomore (200) level, two at the junior (300) level and two at the senior (400) level.

In summary, it is evident that the greatest impact on university teaching by temporary faculty in the Mathematics and English departments is at the freshman (100) level. The single exception is the Mathematics department at ASU where the greatest impact is the sophomore level. As one temporary person phrased it during the interview sessions, "We are, frankly, on the frontlines introducing the students to university education."

Although temporary faculty in these departments have a profound influence on entering students, only the University of Arizona, Mathematics Department has undertaken a long term study of entry level math performance. As a result of restructuring the entry level mathematics program, the retention of students and grade-point-averages (GPAs) have improved (Report on the Entry Level Program, 1988). While this is not a study of temporary faculty, the study focuses on those entry level courses in which temporary faculty are heavily employed.

COMPENSATION AND BENEFITS

"Money is a real problem and symbolic problem...it's insulting"

At Arizona State University faculty associates with masters degrees are paid $500 per credit hour or $1500 for a 3 credit course; faculty associates with doctoral degrees are paid $600 per credit hour or $1800 per course. A full-time temporary teaching five courses per semester (ten classes per year) would make $15,000 or $18,000 depending on the highest degree held. The pay scale was found to be the same in both the English and Mathematics Departments.

The compensation for part-time faculty at Northern Arizona University is less uniform. Some of the part-time faculty are paid through Continuing Education and some are paid from salary savings. Those paid by Continuing Education receive approximately $390 per credit hour while their counterparts paid from salary savings earn $500 per credit hour. The institution is aware of this pay differential and has developed a plan to eliminate this problem. Additionally, the plan includes grades so that individuals would not have to progress through faculty grades. The target date for implementation is Spring 1989.

In Mathematics, the full-time temporary instructor at NAU is paid $18,000 for teaching 12 credit hours per semester. At NAU the English full-time temporary earns $18,000 for teaching 12 credit hours each semester while her/his counterpart at ASU, with a doctorate, earns $18,000 for teaching 15 credit hours each semester.

At the University of Arizona compensation varies between departments. In the English Department the teaching assistants are paid approximately $2393 per three credit course. In the Mathematics Department the per course pay is $2500 for a three credit course. Full-time temporaries in the English Department teach three, three-credit courses per semester, while full-time temporaries in Mathematics have a teaching load of 12 credits per semester. Full-time temporaries earn $14,360 and $20,000 in English and Mathematics respectively.

In comparison, Wallace (1984) reported that Harvard pays $3540 per course for part-time faculty in expository writing and Tuckman (1979) reported that the average salaries for part-time faculty in 1976 were $2,691 and $1,950 at universities and four-year schools, respectively. During the interview process, several temporary faculty reported teaching five courses for one institution and then teaching additional courses at a community college to earn enough to live on. "I take anything that comes up for money." Not surprisingly, most of the temporary faculty were concerned about their level of compensation. In several instances, however, temporary faculty who were "Full-Mooners" and/or "Home-

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Workers" said compensation was not a critical issue. Concern about the level of compensation was also voiced by department heads and coordinators several times during the interview process. These administrators were acutely aware of the low levels of compensation. "We've had super people who care about what they do, and we need to do better for them."

Timeliness of paychecks for some new employees was also identified as a problem at Arizona State University. Part-timers in Mathematics at ASU stated they did not usually receive their first paycheck on time. No such problem was identified in the English Department at ASU, the University of Arizona or Northern Arizona University.

A variety of benefits are offered by each of the institutions but certain employment conditions must be met before the employee qualifies. The University of Arizona's Handbook for Appointed Personnel lists the following requirements for many benefits including health insurance, dental insurance, life insurance, and short-term disability insurance.

1. Must be "full-time" employees. "full-time shall mean employment with the university 50 percent or more full-time equivalent and which employment is expected to continue for six months or more" (op. cit., p. 9-1).

The Academic Affairs Policies and Procedures Manual at Arizona State University lists as conditions of receiving health insurance, dental insurance, group life insurance, short-term disability insurance, two criteria:

Faculty and academic professionals who:

1. are employed to work 20 hours per week (50 percent FTE) or more for a period of six months or more and
2. are qualified to participate in and are making contributions to an approved state or optional retirement program unless exempted by law.

To qualify for long-term disability faculty and academic professionals must, in addition to meeting the above two criteria, be under age 69.

As a result of the use of semester-to-semester contracts, it is possible for a part-time faculty member to be teaching three courses each semester and not qualify for benefits simply because they do not meet the "six months or more" requirement and several part-time faculty stated that teaching two three-credit courses is considered 49 percent FTE not the minimum required 50 percent FTE so that the benefits listed above are not earned.

Finally, Northern Arizona University's Faculty Handbook states "To be eligible for health insurance an employee must:

(1) be a permanent, full-time or part-time faculty member working 50 percent time (teaching six hours per week or more;

(2) be subject to Social Security Tax withholding from wages; and

(3) be qualified to participate in and make contributions to the Arizona State Retirement Fixed Benefit Plan or one of the two optional plans VALIC or TIAA/CREF" (Ch. 3- II, p.1).

The above applicability requirements do not appear under every other benefit, but are implied in some cases.

The lack of benefits for part-time faculty are not uncommon. "Both the Ohio Study and Tuckman's AAUP research reveal that a surprisingly high number of part-timers are not covered by fringe benefits from any source, even though the common assumption is that most have fringe-benefit coverage through their full-time jobs" (Wallace, pp. 14-15).

Although we did not collect information on the number of year versus semester-to-semester contracts, our discussions with chairs and coordinators as well as part-time faculty suggest that most part-time appointments are made on a semester basis thereby rendering these individuals ineligible for major benefits because, although they may teach 50 percent FTE, they are not employed for six months or more. During the interviews, temporary faculty repeatedly stated that only the full-time temporaries received benefits.

THE WORK AND WORKING CONDITIONS OF TEMPORARY FACULTY

The work of temporary faculty varies as do the working conditions. We interviewed temporary faculty in three Mathematics departments and two English departments. Although the categories of activities of the temporary faculty are similar between the departments--class preparation time, teaching, office hours, grading, conferencing with students and in some cases reviewing various student works--marked differences were found between the amounts of time spent on various tasks, the working conditions, the rewards and the extent to which the temporary faculty were integrated into the department.

MATHEMATICS AND THE INTEGRATION OF TEMPORARY FACULTY

Significant variations were discovered in the degree to which the temporary faculty members are integrated into their respective departments. Mathematics serves as an example of this variation. In two of the departments the temporary faculty described a positive relationship with the department and the university. In the third department, the temporary faculty indicated that they were not satisfied with their current relationship with the institution.

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At the University of Arizona the relationship between the temporary faculty and the department was repeatedly described as extremely positive by both temporary faculty and other department personnel. There was unanimous agreement among the temporary faculty that we interviewed that their input into department matters is valued. "Opinions are solicited and listened to." There are several opportunities for the temporary faculty to communicate with their peers and the permanent faculty. Not only are there monthly course meetings, but the recently created Math Instruction Seminar fosters interaction with permanent faculty. One individual remarked "I have never felt that I'm a second class citizen." Located in a storefront away from the department, the temporary faculty said they had mixed feelings toward these accommodations at first. It is inconvenient to get mail and do xeroxing, space is very limited, and students often have trouble finding the place the first time. But it is quiet, telephones are available, and "the communication that it fosters within our group is superb." In addition to teaching, temporary faculty mentor graduate teaching assistants/associates. A departmental administrator added, "Those people have done more than their share. We haven't done our share in rewarding them or giving timely notice." The temporary faculty identified continuity as a significant problem because it impacts long-term improvements and inhibits course continuity. The value of the temporary teachers was stressed by the coordinator and the permanent faculty interviewed for this study and the department has developed a number of ways to communicate that sense of value to the temporary faculty.

The Mathematics Department began employing adjunct lecturers three years ago. Until that time permanent faculty, graduate teaching assistants/associates and visiting faculty taught all of the courses.

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"Everyone is treated pretty much the same...the same access to information...we are invited to all the faculty meetings...social get-togethers you are all invited to." "I'm particularly impressed with the people I work with here. I enjoy the position over here and the people I work with." Support services are not plentiful in the department but the temporary faculty stated that permanent faculty were limited as well. Part-time faculty indicated they served on some ad hoc committees, and the department chair indicated full-time temporaries served on a wider range of committees. Interestingly, part-time faculty who were not former graduate students indicated that the forced interaction with permanent faculty which resulted from renovations this past year was wonderful. The opportunity to meet and interact with other faculty was highly valued.

Again, the use of temporary faculty was identified as fairly recent phenomenon.

ARIZONA STATE UNIVERSITY

The two temporary faculty members that were interviewed revealed overarching concerns about uncertainty of employment from semester to semester and the low level of compensation. Additionally, these individuals said they did not participate in ad hoc or official committees or attend faculty meetings, although they do enjoy talking to permanent faculty colleagues.

In summary, one major theme identified during this study in both the English and Mathematics Departments was the importance of becoming a part of the "academic life" of the department. Meaningful participation, becoming a part of the whole, was important to many of the temporary faculty. Individuals with full time jobs (Full-Mooners) did not place as high a value on increased participation as other temporary faculty.

ENGLISH

Variations were also found in the workloads, support services, roles in decision-making and status of the temporary faculty. While these issues were briefly addressed in discussing the Mathematics Departments, the English Departments shall serve as an example.

WORKLOAD

In the English Departments, temporary faculty teaching composition courses said that grading papers consumed an enormous amount of time. That is, each paper took from thirty to forty-five minutes to grade. The required number of papers ranged between six and ten while the number of students per section was normally twenty-five or twenty-seven. If one assumes there are twenty-five students in a course, each one writes six papers and the instructor takes thirty minutes to grade each paper, then it will take 75 hours to grade papers for one course alone. At ASU, the full-time temporary teaches five courses each semester and it was reported that, in some introductory courses, 10 papers are required from each student. Again, assuming that each paper takes thirty minutes to grade and each section has twenty-five students, the instructor will spend 625 hours each semester on grading alone. During each 16 week semester, assuming a faculty associate works forty hours per week, 15.6 weeks are devoted exclusively to grading. "I feel like a human grading machine." "I'm not a real teacher. I love teaching and I'm committed to it, but I'm burning out fast." Many of those teaching five courses admitted that it was impossible to attend to the full range of teaching duties. "Part of being a teacher is writing letters of recommendations and making phone calls...I've regressed."

SUPPORT SERVICES

In both departments temporary faculty are required to hold office hours. The "bullpen" arrangement used in one department makes this task difficult to accomplish. Temporary faculty share the office and their desk with numerous other people. This condition makes it difficult, if not impossible, to have a private conference with a student. The department chair commented that the physical conditions were the "worst" known. In the second department office space is considerably better with full-time temporaries having private offices and part-time faculty sharing an office with another person but each having a desk.

Secretarial support was not available for use by temporary faculty in either department and photocopying was extremely limited, although ditto machines were always available. The perception of the amount of available administrative support differed between the temporary faculty and the department chairs. Telephones were not available in the offices of the faculty associates or teaching assistants and several individuals reported routinely receiving telephone calls at home from students.

DECISION MAKING AND COMMITTEE WORK

Although both departments routinely include graduate teaching personnel on a range of committees, the same is not true for part-time faculty or in all cases full-time temporary personnel. In one department temporary personnel informally serve on committees but are not elected to committees, and they cannot vote. In the other department temporary faculty reported not having any role, even on the first year English committee. Coordinators and chairs expressed a reluctance to require or request committee work because of the low salaries and this reluctance was repeated by some of the temporary faculty; yet, simultaneously the temporary faculty recognized the importance of routinely and systematically having a voice in decisions, particularly in the area of composition.

STATUS

In both groups of temporary faculty there was a perception that status was a problem. While it was reported that many feel that they have achieved a degree of status in the community as a result of working for the university, within the departments temporary faculty felt they had no status. "Job security and salary are important to us, but status is terribly important from a student's point of view. We can't do much for our students." Regardless of the explicit policy on the role of teaching at the institutions, the low pay, instability, lack of voice on committees and in decision making, minimal administrative support and/or office space, and lack of recognition for the importance of the work being done, contribute to a powerful implicit message about the value of those faculty engaged in lower division teaching.

OBSERVATIONS FROM INTERVIEWS IN THE TWO ENGLISH DEPARTMENTS

1. During the interview process, temporary faculty took the opportunity to introduce themselves to each other and commented on the need to get together more often. Apparently little opportunity exists for this group to interact. Comments were made at both institutions about the isolation felt by temporary faculty and the need to change the current situation.

2. Although the temporary faculty repeatedly stressed the fact that they liked teaching, these individuals recognized the working conditions were not good. During one focus group the phrases "treadmill mentality" and "corporate mentality" were used to describe why people accepted the conditions. And, although a number of suggestions to enhance teaching were presented at the meeting, these individuals did not believe they had the power to facilitate change.

The two universities where temporary faculty in English were interviewed are not unique in their need to improve either salaries or working conditions. Nationally, conditions of teachers of writing have deteriorated to such a degree that in 1986 the Wyoming Conference Resolution was passed by the participants at the Wyoming Conference on English. The resolution was later unanimously passed by the participants at the 1987 annual convention of the Conference on College Composition and Communication. Essentially the three charges in the Resolution call for improved salary and working conditions for postsecondary teachers of writing, establishment of a procedure for hearing grievances, and the establishment of a procedure for action when noncompliance occurs (ADE Bulletin, Fall 1987).

HIRING, ORIENTATION & EVALUATION

ADVERTISING

Advertising for temporary faculty positions is done in several ways. Several of the departments advertise locally using newspapers and/or flyers to other departments and institutions. Additionally, individuals from the local community, spouses of permanent faculty, individuals who have previously served as temporary faculty and former graduate students add to the pool of available people. In several cases, full-time temporary positions are advertised nationally.

SELECTION

There is no uniform method of selection. The most common method of selecting part-time faculty is for review and selection by one individual, but screening, evaluation and selection is also done by a committee in one department. In discussing rehiring with members of the temporary faculty, individuals in several departments stated they did not know what factors entered into the decision to rehire. Conversely, the criteria for rehire were clear to other temporary faculty.

ORIENTATION

Unlike the well-developed orientation given to graduate teaching assistants/associates, part-time faculty in five of the six departments do not have a formal orientation. In two departments, the heads indicated that informal discussions served as the orientation for part-time faculty. In one of the departments, written information about the expectations is included in the informal orientation. Orientation in the Mathematics Department at the University of Arizona is more formal and more extensive. In addition to a pre-semester meeting, the temporary faculty meet monthly during the semester with a course supervisor. Additionally, the recently created Mathematics Instruction Seminar has fostered interaction between permanent and temporary faculty as well as other individuals on campus.

EVALUATION

All six of the departments evaluate the temporary faculty each semester using student evaluations. The results of the evaluations are available to the instructors, but, in some cases, the instructors indicate these evaluations have little to do with compensation. In three of the five interviews with temporary faculty more extensive evaluation was suggested because they (the temporary faculty) could demonstrate their level of competence. "Nobody knows whether I'm competent in the classroom or not because nobody bothers to find out. How do you prove you're worth more money. There is no mechanism for me to make my case."

The practices at the three Arizona institutions are not unlike those identified in the literature. Leslie, Kellams & Gunne (1982) found that 84 percent of the institutions they surveyed did not have a formal orientation for part-time faculty. This same study found comprehensive evaluations of part-time faculty are rare. Hiring practices throughout the country varied from full-scale search and selection to local recruitment (Gappa, 1984). Leslie, Kellams & Gunne (1982) reported that the most effective recruitment was via informal contacts.

THE BUDGETING PROCESS

One of the most significant problems faced by department heads and coordinators with regard to temporary faculty is the commitment of funds by their institutions. "Money committed early is worth more." In some cases budget lines exist, enabling department heads/coordinators to recruit and appoint the best possible instructors in a timely fashion. More often funding is approved at the last-minute; this practice has several consequences. From the point of view of the temporary faculty, this practice increases the uncertainty and instability. "Total uncertainty is the biggest problem. If you get a definite answer a week before classes you are lucky." The department chairs/coordinators, on the other hand, must try to sustain the interest of the temporary faculty as they await the confirmation of funds. "The money just isn't there when you need it." Even the entry-level mathematics program at the University of Arizona, which has been highly successful, is unable to make firm commitments to temporary faculty in a timely manner because of the current funding process. At Northern Arizona University the problem of late appropriations for temporary teaching are particularly critical because the pool of qualified applicants is limited.

RECOMMENDATIONS

Gappa (1984, pp. 98-99) suggests eight areas for improvement in the employment of part-time faculty. In addition to these eight recommendations which are presented first, we have added three recommendations.

- "Appointment: Development of a qualified pool of applicants for part-time faculty positions.
- Contracts: Development of a contract for part-timers that articulates the institution's requirements while specifying and guaranteeing the part-timers' rights.
- Support Services and communication networks: Emphasis on integrating part- and full-time faculty and on giving part-time faculty a sense of dignity and belonging to the institution.
- Governance: Erring on the side of inclusion rather than exclusion in faculty governance and departmental deliberations, particularly with regard to curricular, courses, and teaching materials.
- Compensation and fringe benefits: Provision of an equitable compensation structure for part-time faculty, based upon their qualification, assignments, and performance; and provision of cost-of-living increases. Provision of fringe benefits for continuing part-time faculty.
- Job security: Thoughtful and deliberate treatment of the interests of part-time faculty in decisions about renewal, retrenchment, and dismissal. Appropriate degrees of job security for different types of part-time faculty.
- Orientation and development: Special programs to help part-time faculty become and remain effective instructors; access to regular faculty development funds or programs.
- Evaluation: Development of an evaluation system aimed at improving part-timers' teaching effectiveness that sets clearly articulated standards of performance as one basis for reappointment."

FURTHER RECOMMENDATIONS

- Budgeting Process: Modify budgeting practices to permit temporary faculty to be hired at least four months before the start of a given semester.
- Facts and Information: Generate information about the employment practices, the impact on student learning, and the impact on the organization. Distribute the information

to enhance the formulation of policy by the institution and improve the management practices at the department level.

- Full-time temporaries: In departments where a continuing need for full-time temporary teachers exists, more stable working and permanent relationships, including academic professional status, multi-year contracts, and/or tenure-eligible positions, should be considered by the department and the institution.

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BENEFITS AND COSTS OF ASSESSMENT IN HIGHER EDUCATION: A FRAMEWORK FOR POLICY CHOICE AND COMPARISON

PETER T. EWELL

INTRODUCTION

Over the past three years, calls to investigate and improve the quality of higher education have rapidly escalated. Among the most visible and insistent have been initiatives aimed at determining the outcomes of undergraduate instruction. The resulting "assessment movement" has become a national phenomenon--embracing activities as diverse as state programs to determine the basic skills of entering freshmen, state and accreditation-based efforts to encourage colleges and universities to broadly investigate undergraduate outcomes, and a range of institutional efforts including testing, student surveys, and program evaluation.

Despite considerable activity, evidence about the effectiveness of assessment efforts remains scanty. Partly this is because most are new and have consequently had little opportunity to show results. Partly it is because documentation of both the benefits and the costs of "assessment" remains elusive.

Within these substantial limits, the purpose of this paper is to analyze and discuss what is currently known about the benefits and costs of assessment programs from the general perspective of state higher education policy. In drawing upon national experience in these two areas, however, appropriate caveats and adjustments may be necessary to tailor the analysis to specific economic, governance, and political conditions in the state of Arizona.

ASSESSMENT IN HIGHER EDUCATION:

BACKGROUND

Current interest in assessing the outcomes of undergraduate education is rooted in two simultaneous but independent developments. The first is reemerging concern about the structure and content of the undergraduate curriculum. Partly fueled by national investigations of deficiencies in elementary and secondary education (for example the Nation at Risk report issued by the U.S. Department of Education in 1983), a number of reform proposals directed toward improving undergraduate education emerged in 1984-85. Among them were Involvement in Learning (the report of the National Institute for Education's Study Group on the Conditions of Excellence in American Higher Education), Integrity in the

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College Curriculum (issued by the American Association of Colleges), To Reclaim a Legacy (a report of the National Endowment for the Humanities), and Access to Quality Undergraduate Education (issued by the Southern Regional Education Board). The consensus of these reports--originating for the most part from within the academic establishment--was that undergraduate instruction was in need of considerable overhaul. Particularly recommended were:

(1) greater curricular coherence with respect to content and structure,

(2) higher expectations and standards,

(3) greater opportunity for active student involvement in learning,

(4) improved capabilities to identify and remediate learning deficiencies in incoming students, and

(5) better mechanisms for providing "feedback" on learning to students, faculty and administrators in order to guide improvements.

It is important to note that only the last two of these embrace "assessment" as it is currently understood. And both go considerably beyond the notion of collecting information on undergraduate student performance by stressing the actual uses to which such information will be put.

A second stimulus for "assessment" is increased pressure for accountability with regard to public funds invested in higher education. One component concern is the escalating cost and complexity of public postsecondary education. Both legislators and governors are becoming increasingly sensitive (especially in tight budget years) to the fact that they know very little about the actual impacts of investments that can consume substantial proportions of state general revenue funds each year. At the same time, higher education leaders have become more sophisticated in their claims about public benefit. Links between proposed investments in public higher education and statewide economic development--particularly in high technology areas--have become increasingly visible in the past decade. Both trends have focused the attention of officials and the wider public more explicitly on higher education's overall return on investment. These concerns also have spawned a series of national reports.

Prominently among them is Transforming the State Role in Undergraduate Education: Time for a Different View (issued by the Education Commission of the States) and Time for Results (a report of the Task Force on College Quality of the National Governors Association). Like the "academic improvement" reports that preceded them, these documents called for more and better data about the results of undergraduate study. In addition, however, they recommended that such information:

(1) be publicly available and comparable across institutions,

(2) be used to inform policy and resource allocation decisions at the state level, and

(3) be appropriate to inform "consumer choice" on the part of students and their parents in the decision of which college to attend.

Together, these developments have helped to stimulate varied "assessment" initiatives at both the state and institutional levels. Because of the sheer range of alternatives, some specification of the types of programs currently being undertaken is an important prerequisite for a discussion of costs and benefits--both of which will vary widely depending on program scope, intent, location, and methodology.

1. State Approaches to Assessment:

Currently, some fifteen states have established identifiable "assessment programs" through Board resolution, executive directive, or statute (Boyer, Ewell, Finney and Mingle 1987). Initiatives are expected or planned in an additional fifteen to twenty states over the next five years. State approaches to assessment differ widely, and include one or more of the following activities (Boyer and Finney 1987):

- common statewide testing of the basic skills of incoming college freshmen (in place in NJ, TX, and TN; contemplated in WA).
- common statewide testing of college students for purposes of promotion (FL, GA), to determine undergraduate program effectiveness (NJ, TN; discontinued in SD after 3 years), and/or to allocate resources to institutions (TN).

A requirement that each institution submit and receive approval for a local "assessment plan" to collect information on undergraduate outcomes consistent with institutional mission (in place in AZ, CO, NJ, VA, SD, MO, HI, GA, WI, SC); in most cases, plan approval is in some way linked to institutional funding.

States have also exhibited widely varying levels of investment in such programs. In many cases, no new dollars are associated with the mandate. In others, categorical grant programs have been used to support "demonstration projects" at individual institutions. In a few cases, substantial new dollars have been invested at the state level (in NJ, \$850,000/year for college outcomes, \$500,000/year for basic skills assessment; in VA, institutional grants of \$10-12/FTE student at all public institutions).

2. Institutional Approaches to Assessment:

Partly in response to emerging state mandates--most of which assign responsibility for designing and carrying out assessment and evaluation activities to individual campuses--the past three years have also seen development of a considerable range of institutionally-based assessment efforts.

Before 1984, the number of institutions possessing identifiable "assessment programs" was extremely small. Best estimates by 1988 indicate that some 12-15% of American colleges and universities have actually established such programs--most of them in the past two years (for example, Hyman et al. 1988; El-Khawas 1987). Additional national survey data (for example, El-Khawas 1986) indicates widespread attention to the issue, and substantial expectations that assessment programs will be implemented in some form on a majority of public campuses.

In establishing the range (and cost) of such initiatives, it is important to stress that many existing institutional data-collection activities may be included. Prior to the emergence of "assessment" as an issue, most colleges and universities collected considerable evaluative information about students through a variety of mechanisms (Ewell 1983). Most common are diagnostic testing to determine weaknesses in basic skills, and occasional opinion surveys designed to determine student satisfaction with campus services. Most institutions also collect a range of demographic and course performance information about their students, embodied in computerized student record systems. Generally lacking, however, and explicitly addressed by an identifiable institutional assessment program, are

(a) information on the effectiveness of the curriculum as a whole as determined by changes in overall student knowledge and skill levels, and

(b) an institutional mechanism for integrating scattered information on institutional effectiveness and using this information systematically to improve instruction.

While details of emerging institutional assessment programs vary widely, most contain sufficient common features to allow meaningful comparison and to support limited generalizations about costs and benefits. Partly this is because most such programs have been modelled on two or three widely quoted examples--most prominently for public institutions, Northeast Missouri State University and the University of Tennessee, Knoxville. Partly this uniformity is also due to the fact that most recently established programs were developed in response to state guidelines--most notably in Virginia, Colorado, and Missouri. Among the common emerging features of institutional assessment programs are the following (Ewell 1987):

- An identified office or individual assigned explicit responsibility for coordinating the assessment function, for advising individual academic units in designing assessment and evaluation procedures, and for helping to interpret obtained results for decisionmaking.

Generally this office or individual is given an identifiable budget for the activity--a budget that often reflects reallocation of existing information functions as well as funding new activities.

Reporting lines vary considerably, but generally locate the function in close proximity to the institution's chief academic officer.

While recruitment of an evaluation/assessment specialist to manage this function is occurring with increasing frequency, most common is reassignment of a faculty member in education or social science to manage the activity.

COMMON COMPONENTS OF ASSESSMENT PROGRAMS

- Basic skills testing in reading, writing, and computation for entering freshmen.

Generally this is an existing activity, reassigned to the assessment function.

At the same time, changes in this function are often made to render it more systematic. These include,

(a) ensuring that all entering students are tested (often they are not, as they can "place out" of such testing by high school record or SAT/ACT performance--neither of which provide a good guarantee that students in fact possess the required skills);

(b) use of common test instruments (often a range of instruments are used for different types of students with noncomparable characteristics and results);

(c) mandatory placement of students into remediation when deficiencies are identified (often students are "advised" to take certain remedial courses but in fact do not do so); and,

(d) retesting students as a condition for exiting remediation using the same tests or instruments that resulted in the initial determination of deficiency (often students so tested after "completing" remediation still cannot perform effectively enough to do college level work). Such changes will generally considerably alter the character and effectiveness of basic skills testing programs.

o Evaluation of the effectiveness of "general education," by looking at the development in students of such integrative skills as critical thinking and problem solving.

For most institutions, this is an entirely new activity, as the only existing information will be student course grades in general education courses. Common practices include,

(a) administration of one or more standardized examinations to samples of students at the end of the sophomore or senior years to determine growth,

(b) design and implementation of locally-designed examinations and exercises that require students to use knowledge in an integrated fashion to solve problems, and

(c) special surveys and course evaluations that tap student perceptions about the effectiveness of general education.

o Evaluation of the effectiveness of instruction in the student's major field.

The degree to which this is a new activity depends upon the field of study. In most professional or occupational fields, existing certification, licensure, or accreditation procedures demand such assessment. In most traditional academic disciplines, no such procedures are typically in place. Consequently, establishing an explicit assessment program in this area generally entails,

(a) ensuring that all fields undertake a periodic examination of this type (usually every five to seven years),

(b) ensuring that most of the knowledge and skills objectives that the program claims to develop are in fact assessed in some way, and

(c) determining the success of graduates in employment and further study. Often these activities are made a part of existing program evaluation processes.

Generally they require departments and programs to work individually, with limited funding and technical assistance provided through the institution's assessment program.

- **o** Determination of student satisfaction and behavior through periodic surveys.

Depending upon past institutional practice, this can imply a reassignment or a wholly new activity. Generally responses are sought from both current and former students, and involve,

(a) goals and goal fulfillment through attendance,
(b) reactions to and satisfactions with various aspects of the instruction and services provided,

(c) self-reported development in identified areas of knowledge and skill, and for graduates and former students

(d) current activities and an evaluation of the strengths/weaknesses of instruction received.

Often such surveys are centrally administered by assessment offices. In other cases, they are administered by different units across the campus, but are coordinated and partly supported through the assessment function.

Although the emphasis placed upon each of these activities may vary from institution to institution, they together represent a minimum set of assessment functions addressed by such programs.

All five, for example, are explicitly addressed by assessment planning documents at Arizona's three public universities.

SOME CAVEATS ON ESTIMATING THE COSTS AND BENEFITS OF ASSESSMENT

In attempting a comprehensive review of the costs and benefits of institutional assessment programs, a number of initial observations and caveats are in order. Each places important limits on what can meaningfully be accomplished. **First**, comprehensive programmatic assessment efforts are quite new. Fewer than half a dozen institutions have established such programs for a sufficient length of time for their consequences to become clear. The vast majority only initiated such activity within the last two years and are still in a planning, shakedown, or implementation mode. Consequently, their cost and payoff structures will probably be different from those typical of fully established programs. Despite similarities in coverage and function, moreover, institutional assessment programs differ markedly in administrative organization. This means that they may also differ significantly in the way they account for invested resources--particularly those having to do with reassigned personnel.

Second, because establishment of an explicit assessment function often involves a reassignment of existing activities, actually counting invested resources can be difficult. What is of interest is less the total cost of "assessment activity" than the net marginal investment in new assessment mechanisms established, plus the resource implications of reassigning old functions such as placement testing and student surveys. Moreover, because such existing functions are often scattered and inefficient, establishing a centralized coordinating mechanism can yield economies. As a result, past attempts to estimate the cost of institutional assessment programs have concentrated on establishing the marginal costs of such programs, rather than the total investment required (for example Ewell and Jones 1986, Lewis and Wasescha 1987).

Third, while the claimed benefits of institutional assessment are many, consistent valuation of these benefits is difficult. This situation is shared by most analyses of higher education's benefits: not only are dollar equivalents hard to come by, but estimates of benefit will vary considerably across different individuals with differing value structures and preferences (Bowen 1980). As a result, there have been few definitive studies of concrete rate-of-return for investments in instructional processes in colleges and universities beyond such relatively well-defined technical areas such computer-assisted instruction. This situation considerably limits the applicability to assessment activities of formal "cost/benefit" techniques that compare the dollar values of investments with the dollar values of obtained results (Levin 1983).

Given this condition, past studies of educational impact have generally concentrated on one of two alternatives. Cost/effectiveness analyses examine invested costs in the light of some identifiable common output or criterion measure for the activity in question. But with the exception of degree program completion, few common criterion measures exist for the outputs of higher education. Indeed, it is the very absence of such measures which is in part inspiring the call for outcomes assessment in the first place. The second alternative is to compare costs with "utilities"--identifiable benefits which may vary in value across beneficiaries depending upon their individual goals and preferences. Here the primary intent of analysis is to determine which alternatives provide which kinds of benefits to which beneficiaries at what cost. While such analyses do not provide unambiguous "cost/effectiveness ratios" upon which to decide what to do, they can nevertheless provide considerable guidance for policy.

Fourth, like benefits, costs may also be subject to inconsistencies in valuation. In addition to identifiable fiscal and physical resources, the establishment of a new and controversial program may cost "political capital" or may cause considerable organizational friction over and above its observable cost. Focusing institutional and faculty attention on assessment may preclude other opportunities or may inhibit instructional innovation or risk-taking. Like educational benefits, these effects are sufficiently ambiguous that converting them into estimated dollar equivalents may lose information. Moreover, beyond the issue of how much is invested there is that of who pays. Valuation of costs may vary significantly depending upon what particular parties-at-interest actually have at stake in the process.

Finally, the nature of assessment as a "management information" activity means that it is a special kind of investment--one not easily subject to the traditional rubrics of cost/benefit or cost/effectiveness analysis. Like all activities related to management, operating an assessment program involves the investment of real resources. These entail direct and observable costs to the institution.

Benefits of information, however, are generally highly indirect. Literature on the "economics of information", for example, is founded on management's use of information to make effective choices among posed alternatives--each of which has an associated stream of costs and benefits (for example, Huber 1980, Day 1978). If additional information can increase the probability of choosing a "profitable" alternative, investment in obtaining this information is justified up to the point where the margin of incremental "profit" disappears. But decisionmakers in higher education are rarely presented with such choices. Far more common is a situation where information--obtained at an invested cost--indicates that a particular deficiency is present and suggests some lines of attack toward addressing it. To address the deficiency, however, requires the investment of yet another increment of resources. Absent this second increment (or absent its being effective), investment in information may pay no dividends whatever. This is one reason why proponents of educational assessment and evaluation pay so much attention to explicit mechanisms for connecting evaluation information to concrete decision processes.

Taken together, these caveats suggest a treatment of the costs and benefits of institutional assessment activities with the following properties:

- o Costs are appropriately treated as programmatic costs--that is, the costs associated with a formal, established, identifiable activity with sufficient organizational and budgetary identity that resources can be consistently accounted.

- o Costs are appropriately treated as marginal costs.

That is the difference in investment between establishing an assessment program of given content and structure over existing information-gathering and utilization costs previously being incurred by the institution.

- o Costs are appropriately treated as the costs of assessment itself, not the costs associated with actually addressing identified deficiencies.

Moreover, the costs of assesment are part of any total rate of return calculation for the costs and benefits of instructional improvement in undergraduate education.

- o Some "costs," such as loss of access and reduction of risk-taking, are more appropriately treated as externalities than as direct dollar costs;

While it is in principle possible to obtain rough dollar equivalents for these costs, analysis is more meaningful if they are considered directly.

- o A few claimed benefits of assessment, while difficult to render consistently in dollar terms, are sufficiently comparable across situations to in principle support a cost/effectiveness estimate;

Where results are comparable, for example claimed increases in student persistence and graduation rates, cost/effectiveness calculations are appropriate.

- o Most benefits of assessment are appropriately treated as "utilities" to particular constituents in the process, each of which may,

(a) value obtained outcomes differently, and

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(b) pay different shares in the total investment.

These properties define the limits for the discussion that follows.

PARTIES-AT-INTEREST

Benefits of assessment have been claimed by proponents in bewildering variety. These range from improvements in specific cognitive outcomes for individual learners to broad societal benefits achieved by greater accountability to the taxpaying public. Similarly, "costs" of assessment have been raised by critics that encompass losses of opportunity for individual students to politicization of higher education that distracts the enterprise from its fundamental ends. In order to make sense of these claims in determining the wisdom of embarking on various forms of assessment, an analytical framework encompassing the majority of these claims is required.

Figure 1 provides the foundation for such a framework by arraying benefits and costs against a range of constituencies or "parties-at-interest."

Benefits are roughly presented in terms of the degree to which they provide direct or indirect payoffs to the identified party. Costs are noted as either direct dollar consequences or as "externalities" for which calculation of dollar equivalents are for the most part inappropriate. Parties-at-interest in this scheme are identified as follows:

- Individual students

are individuals directly involved in higher education as "consumers", including currently enrolled students, former students, and potential students.

- Faculty

are members of higher education faculties currently or potentially involved in providing undergraduate instruction.

- Institutions/Programs

are colleges and universities as organizational entities, or subunits within institutions that can function relatively autonomously.

- External Constituents

are organizations external to higher education that employ the graduates of colleges and universities and that stand to gain or lose because of skills or deficiencies possessed by graduates--either in general or in particular programs (these may include business/industrial employers, local governments, social service agencies, etc.)

- The Public

are members of the general public (either as taxpayers or as the beneficiaries of improvements in general public welfare due to an educated public) and their elected representatives.

Each of these parties-at-interest may benefit or bear costs in different proportion depending upon the types of programs proposed.

This framework is intended to serve two distinct analytical purposes.

First, it can serve as a guide for systematically summarizing existing arguments and evidence about the actual impacts of institutional assessment programs.

Reviewing this body of material cell by cell for different parties-at-interest will constitute the balance of this section.

Second, the framework can be used to compare the benefits and costs of different proposed alternatives to particular constituencies--for example a common state-mandated basic skills placement examination against the establishment of incentives for institutions to create their own programs.

While such an analysis does not provide a definitive judgment about relative program cost/effectiveness, it will at least enable policymakers to select the most promising alternatives. Several such programmatic trade-offs will be considered in a following section.

1. Benefits of Assessment by Identified Parties-at-Interest:

Benefits of assessment have been claimed and documented in a variety of areas. Evidence for each will be briefly considered by potential beneficiary groups as outlined in Figure 1.

a. Individual Students:

Among the claimed benefits of establishing assessment programs for individual students are the following:

o Documentable increases in knowledge and skills.

Direct increases in student knowledge and skills are held to be a product of both the individual feedback on performance provided by testing and of improved ability to target teaching on identified weaknesses in student abilities.

Evidence from both state and institutional testing programs is fragmentary, but indicates that modest gains are partially attributable to assessment processes. In most cases, however, these gains are confined to so-called "basic skills" areas--reading, writing and computation. In Florida, for example, demonstrable increases in student writing ability have been associated with the state's College Level Academic Skills Program (CLASP) which involves testing sophomores in basic skills as a condition for advancement (Ciereszko 1987). At institutions such as Northeast Missouri State University where repeated administration of a test instrument can document the "value added" of instruction, percentage gains in English subscores as measured by the ACT Assessment Examination rose from 4.8% in 1978 to 10.6% in 1983; this period saw heavy investment by the university in enhancing assessment processes and in using the results to improve curriculum (McClain and Krueger 1985). In both cases, benefits are somewhat offset by the fact that the test-taking populations became more able due to selection biases: in Florida, less able students were deterred from taking the examination while at Northeast Missouri admissions standards rose in the same period. Similarly, it was not assessment alone that caused any increases but rather the combination of assessment and appropriate curricular action. If used to inform curricular intervention, however, modest gains in overall levels of basic skills can generally be expected.

o Increases in persistence and graduation rates due to improved advisement, placement and retention efforts.

Student assessment programs have also been widely associated with gains in student persistence and graduation. This is due primarily to two different mechanisms.

First, at the level of individual courses, coupling assessment of pre-requisite skills with course registration policies can result in significant increases in success rates. At North Carolina State University, for example, directed placement into mathematics and pre-engineering courses resulted in 30-40% increases in course passage rates overall, and over 70% increases for minority students (Ewell 1984b).

Second, institution-level assessment results--particularly the results of student attitudinal and perception surveys--can result in documentable increases in overall rates of student retention and degree completion. At Northeast Missouri, for example, five-year degree completion rates have risen approximately 15% since initiation of comprehensive assessment (Northeast Missouri State University 1987). More typical, however, are the experiences of such institutions as Towson State University (MD) and other members of two national student outcomes assessment projects in the early 1980's that increased retention rates by 8-10% overall in three years (Ewell 1984b; Kemerer, Baldridge and Green 1982). Increased retention rates, of course, are of individual benefit in raising a given student's overall chances of obtaining a degree, and therefore of receiving the payoffs associated with degree completion.

- Increased credibility of the degree obtained.

Another claimed benefit of assessment is public demonstration of the actual "learning content" of a baccalaureate degree (McClain 1984). Given considerable evidence of wide variations in student ability among the products of different institutions, one claimed objective of student assessment is to provide concrete evidence of what students know and can do upon graduation. The claimed individual payoff in this case is increased competitiveness of graduates in the employment market.

No concrete evidence currently exists to support this proposition beyond the generally better placement rates experienced by graduates of some institutions participating in assessment. Much of this success, however, could equally be attributed to the fact that these institutions have simultaneously raised their admissions standards.

- Improved information for making initial college choices.

Rather than affecting currently enrolled students, these benefits are held to accrue to potential college students and their parents. Publicly available information on attainment levels, success rates, and the placement experiences of graduates may enable more informed consumer choices about which college or university to attend. The perceived success of graduates has traditionally been a major drawing card for "selective" institutions (Zemsky and Oedel 1983).

Evidence that assessment results can to some extent offset entering student ability in the perceived attractiveness of an institution is provided by the increased application pools at such institutions as Alverno College, Kings College, and Northeast Missouri where assessment programs have been in place for a number of years. As above, however, these increases have been accompanied by highly visible innovations in curriculum in addition to assessment.

b. Faculty:

At the level of individual faculty members, few concrete benefits are claimed through assessment. Two, however, are of sufficient prominence to note below:

- Increases in the ability to target teaching on the identified needs of members of a given classroom.

Faculty members at institutions such as Kean College (NJ) and Kings College (PA) report that pre-assessments of student knowledge and ability significantly improve their ability to tailor instructional material to appropriate levels (for example, Farmer 1988). This allows important deficiencies in prerequisite knowledge to be quickly identified and dealt with before the term is too far advanced. It also allows adjustment in the timing and coverage of class content at an early point in the term.

- Increases in faculty ability to design and administer classroom tests.

While the basic intent of comprehensive outcomes assessment programs is to examine performance across individual classes and students, significant numbers of faculty members a all types in institutions report that the engagement in the design of assessment has improved their ability to design better tests for their own use (for example, Calhoun 1986; Banta 1985; Banta and Moffett 1987). This experience has been a particularly apparent effect of implementing assessment in the major field or department at research universities. Similar impacts have been reported with less frequency in general education at comprehensive colleges and liberal arts colleges (Curry and Hager 1987; Farmer 1988). The key here, however, is that faculty must have been actively involved in designing and administering the assessment program, though there is some evidence that participating in commercial tests such as the ACT-COMP can also result in modest faculty development benefits (Banta 1986; Forrest 1982).

c. Institutions/Programs:

By far the greatest claims of positive benefit for systematic assessment have been at the institutional or program level.

Among them are the following:

- Improvements in the sequencing and structure of undergraduate curricula.

Most institutions engaging in comprehensive assessment report significant early curricular changes as a result. Many of these changes, it is interesting to note, appear to have occurred as a result of designing the assessment (Banta 1986; Ewell 1984b).

In several reported cases, curricular change pre-dated actual data collection.

Documented curricular changes resulting from assessment activities have been of three distinct kinds.

First, there have been notable changes in the sequence of particular courses making up particular curricula. For example, at Mt. Hood Community College, course order in several technology programs was reordered--yielding increases of 10-12% in degree completion rates (Ewell 1985); at the

University of Tennessee, Knoxville, introductory courses in several major fields were made mandatory (Banta and Moffett 1987).

Second, assessment programs have in several cases led to identification and elimination of "soft-track" courses: at Northeast Missouri, elimination of such courses in mathematics and requiring students to take more solid math courses resulted in visible gains in sophomore-level math test scores (McClain and Krueger 1985).

Finally, assessment results have led to the introduction of new courses to address obvious curricular deficiencies: a good example is provided by the University of Tennessee, Knoxville where surveys of current and former students in Business indicated the need for courses in Business Law (Banta and Moffett 1987). In each of these cases, of course, the demonstrated link is between assessment and changes in the curriculum--changes that are presumed to benefit students in the form of increases in knowledge and skills. No direct evidence of such increases have as yet been demonstrated.

o Improved institutional planning and resource allocation.

A second set of institutional benefits concerns the reported utility of assessment results in making better administrative decisions--particularly those involving program continuation, investment, and disinvestment. For these benefits to occur there must be a strong linkage between assessment information and a regular and systematic process of program evaluation or review. At institutions where such linkages are present--for example the State University of New York at Albany--both institutional administrators and program/department chairs report that better decisions are made about resource allocation (Ewell 1984b). Consistent with overall mission and the results of strategic planning, investments are targeted toward identified deficiencies in curriculum in part discovered through assessment activities. Similar experiences have been reported by top administrators at the University of Tennessee, Knoxville, where assessment results are also visibly used in the program review process (Banta and Fisher 1984). In some reported cases, additional assessment information has determined a program continuation decision which would otherwise have been different. At St. Petersburg Junior College, for example, information about post-graduate success and favorable employer ratings for graduates changed a Board decision about continuing an "inefficient" program in Social Work (Ewell 1985).

o Increases in faculty time committed to teaching.

A number of observers have reported gains in faculty "time on task" expended in support of undergraduate instruction as a result of planning and implementing comprehensive assessment activities. Such reports have been particularly frequent with regard to general education--an area which often claims last priority in allocations of faculty time and attention. In such cases, faculty report talking more with their colleagues about general education issues, discussing particular course content with greater frequency, and spending more time preparing for classes and talking with students. Concrete evidence of this effect is scanty, however, and relies only on unsystematic self-reports from faculty and departmental administrators.

- Enhanced ability for institutions to obtain additional resources.

Heightened interest in assessment per se has, of course, enhanced the willingness of both public and private funders to provide resources to directly support such activities. Those institutions that have instituted programs early have generally been able to garner such funding--often in substantial amounts.
More significantly, institutions that have collected assessment results over time have been able to use this information to make a better case for budgetary requests from state governments and for special program requests from foundations and other funders. In Missouri, for example, Northeast Missouri has consistently supported special appropriation requests from the legislature with a range of concrete assessment information--most recently in a library enhancement request (Krueger and Heisserer 1987). Interviews with state legislators in Missouri indicate that the availability of such information was a significant contributor to the decision to fund the institution's request--both because it directly supported action and because it provided indirect evidence of good management practice (Ewell and Boyer 1988). Similarly, Kings College (PA) has used its assessment program to obtain successive curriculum improvement grants from several national and local foundations (Farmer 1988).

d. External Constituents of Higher Education:

A number of benefits of assessment are claimed for agencies and institutions that employ higher education's graduates. Few are to date substantiated by any direct evidence. They include the following:

- Increased assurance that potential employees possess requisite basic and higher order skills.

Many institutions that employ college and university graduates have over the years been forced to design and implement their own testing programs to determine the reading, writing, and computational skills of potential employees. Largely they report implementing such programs because possession of a baccalaureate degree can no longer be taken as sufficient evidence that individuals possess required skills. Recently, for example, the US military ceased to accept a college degree as the sole source of evidence about basic skills and is requiring special testing to determine skill levels among officer candidates (Ewell 1984a).
Credible higher education assessment would presumably obviate the need for such special testing programs, resulting in significant cost savings for employers.

- Increased assurance that potential employees who are graduates of specific job-related programs possess the special skills necessary to perform effectively.

This benefit parallels the above, but with respect to specific, identifiable, job-related skills. Institutions that have instituted end-of-program comprehensive examinations, practica, or projects in which job-related skills can be demonstrated in a real or simulated job setting have reported that potential employers are more likely to hire their graduates. Results of this kind have been particularly apparent in Nursing and other health professional training programs. As above, demonstration of skill before employment obviates the need for employers to "remediate" deficiencies after employment, again resulting in a potential cost saving.

- Increased assurance that potential employees possess appropriate attitudes toward work.

Increasingly, employers report that they are concerned about whether otherwise well-trained college and university graduates possess important job-related attitudes such as motivation, persistence, and interpersonal values that support teamwork. These concerns have been instrumental in the efforts of some professional program areas to explicitly stress the development and assessment of such attitudes while enrolled--for example the American Association of Collegiate Schools of Business. To the extent that these efforts are successful, they are presumed to represent a payoff to employers in the form of a more productive workforce (e.g., Bowen 1977).

e. The General Public:

Claimed benefits of assessment for the public at large rest largely on arguments of improved accountability.

Specifically, assessment programs are held to be related to the following:

- Increased assurance that public tax dollars allocated to higher education are appropriately invested.

Much of the argument for assessment from public officials rests on the proposition that the public has a right to know the effects of invested resources.

Absent specific performance information, public accountability at least demands evidence of effective and prudent management of public enterprises. Assessment programs are argued on both grounds. Neither is in any way quantified or quantifiable.

- Increases in general public welfare associated with other identified benefits.

Many claims have historically been made about the general benefits of an educated citizenry. They include overall increases in social productivity, cultural and personal benefits, and avoidance of such negative social consequences as crime and social disruption (Bowen 1977). The majority of such benefits can be seen as "secondary effects" of one or more identified benefits above.

2. Dollar Costs of Assessment:

Despite the fact that assessment is relatively new as a distinct activity, its direct dollar costs can be more reasonably estimated than its claimed benefits. Partly this is because many associated costs are incurred early, and can consequently be observed more readily. Partly it is because the basic ingredients of direct cost required to operate assessment programs are comparatively well defined. As a result, several past attempts have been made to establish the direct costs of such programs (Ewell and Jones 1986; Conrad and Wilson 1985; Bowen 1985; Lewis and Wasescha 1987). It is important to note that these studies have themselves been used by several state governments (for example, Virginia and New Jersey) to establish guidelines for funding institutional assessment programs. Consequently, actual available direct cost data has tended to converge in recent years: following Bowen's analysis of expenditures in higher education (1980), the amount of fundin provided itself tends to determine "costs", because institutions spend all of what they are given. Assessment programs are no less subject to this observation than are any of the other things that institutions do.

Any discussion of assessment costs involves two distinct topics.

First, it is necessary to actually estimate the direct costs incurred--based on both the actual cost components of an assessment program and on an analysis of what institutions actually spend.

Second, it necessary to determine who pays these costs.

a. Cost Estimates for Assessment:

Two methods are generally used for arriving at estimates of program costs. The most frequent is "component costing" in which an estimate of total program cost is constructed by determining the costs associated with each of the program's requisite elements. A second method--"statistical costing"--involves analyzing a number of existing programs and calculating what is actually spent on program activities.
Both methods have been used to estimate the operating costs of institutional assessment programs. Due to small numbers of existing programs, however, statistical methods have generally been used only to confirm the estimates derived from component costing.

In implementing assessment programs, institutions incur costs in four areas. They include the following:

o Instrument costs.

Various cognitive tests and student surveys constitute the technical basis for any assessment data gathering effort. Before they can be fielded, such instruments must be developed or obtained. If they are developed locally, costs are incurred by faculty and measurement specialists. After initial development, such instruments can be produced on a regular basis--generally at lower cost than comparable commercial instruments. Institutions that have developed their own examinations have usually treated their construction as a departmental activity. Common practice, for example, is to provide each department with grants of $2000-3000 to cover the direct costs of test construction. This practice tends to bury many test-making expenses in ongoing departmental administrative budgets. If the full cost of such activity were calculated, it would undoubtedly be higher than budgeted amounts.
Commercial tests and surveys are usually purchased on a per unit basis. Costs range from a low of $7/instrument for such widely administered tests as the ACT Assessment to $75-$100/instrument for specialized field examinations. Costs for commercial cognitive instruments generally include analysis and scoring as well as acquisition of the instrument itself.

Commercial surveys are also generally purchased on a per unit basis, with costs ranging from $0.25/survey to approximately $1/survey. When analysis services are also used, these costs average $3-$5/ survey. In most cases, minimum orders or service charges of approximately $100 apply.

o Administration costs.

Once acquired, tests and surveys must be administered to students. At some institutions, existing testing centers established for placement or diagnostic testing may bear some of this burden. In most cases, however, the number of instruments to be administered will require resources beyond those available in existing testing centers. At minimum, test administration requires personnel to serve as proctors. Moreover, special equipment such as projectors and tape recorders may be required for some types of examinations (for example, the ACT-COMP). Survey questionnaires will either be administered in class or by mail. In the first case, direct costs of administration will be minimal--though some personnel costs will be incurred. In the second case, experience indicates incurred costs of $2-$3/completed instrument should be budgeted--an estimate that includes more than one follow-up mailing, possible telephone follow-up, and the costs of monitoring the follow-up process.

- Analysis costs.

As noted above, commercial cognitive tests generally include analysis and processing expenses in the price of the instrument. Scoring and analytical services that cover the costs of data entry, computer analysis, and production of a simple summary report are also available for most commercial surveys. To be of maximum use, however, obtained data will probably be analyzed locally, requiring additional personnel and data processing costs. This will be particularly true for locally-designed assessments, where data coding schemes and analyses must be designed from scratch. In the initial stages of such a process, considerable care must be taken to develop error-checking procedures and methods for handling incomplete or contradictory information. Once such procedures are put in place, however, ongoing costs for analysis will be minimal--principally involving personnel and computer time.

- Coordination costs.

Most institutional assessment programs involve establishment of a central function to coordinate a range of data collection activities and to provide technical assistance to departments and units in designing, implementing, and interpreting the results of local assessments. Costs associated with establishing an office or function of this kind include those for new professional and support staff, space to house these personnel, and ongoing operating expenses. Established offices of this kind range from .5-2.0 FTE professional staff, depending upon institutional size, commitment, and the complexity of the program. In many cases, existing personnel are reassigned to provide staffing for an assessment center. Faculty with appropriate research backgrounds in the social or behavioral sciences, or Testing/Institutional Research professionals may be taken from their current assignments and given responsibility for coordinating institution-wide assessment activities, designing instruments, or for analyzing and interpreting test and survey results.

In such cases, the relevant cost consideration is that of replacing the reallocated staff member in his or her original function.

Based on these cost components, most past estimates of appropriate component costs for institutional assessment range from $7-$10/FTE student. Such estimates must be treated with extreme caution, however, as appropriate programs will vary greatly based upon institutional mission, the number and types of instructional programs offered, and characteristics of the student body.

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Estimates will also vary greatly depending upon whether and how sampling strategies are used and the degree to which the institution has already developed appropriate entry testing and survey follow-up procedures.

Statistical estimates of assessment costs based upon actual incurred costs at established institutions yield a somewhat higher estimate on a per-student basis.

Program budgets for Northeast Missouri and the University of Tennessee, Knoxville--both of which have operated identifiable assessment programs for over five years--average a bit over $10/FTE student annually. Emerging institutional programs, for example those at James Madison University and Kean College, are currently incurring costs of about $12-$15/FTE student each year. In such cases, however, higher costs are expected because considerable instrument development is being undertaken in the program's first years.

Institutional budgets for assessment submitted by all public institutions in Virginia last year documented expected costs ranging from about $8/FTE to $35/FTE. Funds actually allocated by the Virginia State Council for Higher Education for institutional assessment activity for next year averaged $12/FTE across institutions.

b. Who Pays?

While the direct dollar costs of institutional assessment can be estimated with reasonable confidence within a range of $7-12/FTE student, the question of who bears these costs can vary considerably. Different methods of allocating costs among the principal parties-at-interest will, of course, heavily determine their net payoff as a result of the activity. Existing institutional practice has involved direct dollar costs incurred by one or more of the following:

- Individual students.

Some institutions pass on the costs of assessment directly to individual students in the form of a testing fee. South Dakota's statewide assessment program, for example, is funded by a per student charge of $7/student, which covers all direct dollar costs of acquiring and scoring mandated instruments (Boyer and Ewell 1988).

Other individual institutions levy testing fees ranging from $7 to $9 per student.

Generally, the case for charging students is made on the basis of the direct benefits that students receive from the operation of a testing or assessment program.

- Faculty.

While individual faculty members may incur considerable opportunity costs and may invest considerable time through their participation in assessment, they do not generally bear any dollar cost. Indeed, if the institution chooses to invest heavily in the development of local instruments, faculty may receive direct dollar payments for their involvement.

Generally, however, these are in lieu of teaching and do not represent an increment of total income.

- Programs/institutions.

Where additional dollar support for assessment is not provided to institutions or programs for engaging in assessment--either through direct allocation or through a student fee structure--the cost of assessment must be directly borne through reallocation. In Missouri, for example, the total cost of mandated institutional assessment must be supported by institutions themselves, as no new resources have been provided. Even in cases where some additional support is provided, it is often insufficient to cover the complete cost of the activity. Within institutions, for example, support provided to individual programs or departments for developing and piloting a major field examination is approximately $2000-$3000. Given actual incurred costs, this amount may cover only half to two-thirds of the requirement.

- The public.

To the extent that direct increments of dollar cost are not covered by student fees, they are ultimately incurred by taxpayers. On a per-taxpayer basis, however, such additional costs will be small compared to total payments for higher education. New Jersey's statewide College Outcomes Evaluation Project--currently the largest such statewide developmental effort--is budgeted at $850,000/year. Virginia has provided institutions with a total of $4.4 million for assessment in the coming year. Such investments are well within public program evaluation guidelines that call for the investment of 1-2% of total budget in evaluation activities, and well below typical corporate investments of 5-8% in research and development activities (Bowen 1977; Lewis and Wasescha 1987).

3. Some "Externalities" of Assessment:

Not all identifiable negative consequences of assessment can be appropriately treated as dollar costs. Some represent negative individual or social consequences that could be costed out, but for analytical purposes are more beneficially identified individually. Examples include limits on access to higher education that disproportionately affect members of minority groups. Others represent demonstrated consequences of assessment that may be negatively valued by some constituents but not so by others, or that represent truly non-quantifiable results. Examples include narrowed choices of programs or courses within curricula on the part of students, or limits on the freedom of individual faculty members to teach what they please as they please. Each of these identified externalities is treated by its associated party-at-interest below.

a. Individual Students:

Among the negative consequences experienced by individual students attributable to assessment are the following:

- Increased burdens associated with testing external to the classroom.

In cases where assessment is not built into the curriculum and involves additional testing or surveys, students pay a cost in lost time. This cost is particularly apparent where assessment results are used solely to inform curricular or program decisionmaking and thus have no individual consequences for students (Banta 1988). The extent of this cost can be estimated in two ways.

First, the amount of time committed can be directly estimated: for most institutional assessment programs, time commitments for students will average three to four additional hours per year. This result could be costed out at prevailing student wage rates to obtain one estimate of lost benefits to students.

Second, some institutions have attempted to pay students directly for participation in assessment: quoted amounts range from $10-20 for a two or three hour testing session, generally held on an evening or weekend. It is important to note, however, that few students consider the reimbursement worth the effort. Indeed, widespread institutional experience with the difficulties of motivating students to commit time to assessment absent a direct evaluative consequence indicates this problem to be considerable for assessment programs that provide programmatic information only.

o Loss of access and choice with respect to desired courses or programs.

Two kinds of negative consequences for students have been reported.

First, if assessment results are used to restrict registration in particular courses and programs, individual students may be barred from attending. If the primary consequence is to give students the opportunity to remediate deficiencies so that they may subsequently successfully complete desired courses, this loss is justified--although students may suffer time delays in completing their programs. But if a consequence is to deny access absolutely, a significant cost may be borne--particularly for members of minority groups who may perform poorly on formal assessments for a number of historical reasons.

Second, if results are used to inform curricular decisionmaking, an important consequence may be to change the structure of curricula. This may result in elimination of preferred courses, or making more uniform the sequence in which particular courses are offered. Both limit choice on the part of individual students as "consumers." Both may also imply that some students will take longer to complete their coursework. In both respects, moreover, assessment tends to result in curricular changes that limit an individual student's "right to fail."

o Inappropriate limits on access due to embedded biases and inequities in assessment procedures.

If assessment procedures are used for "gatekeeping"--that is to deny individual students access to particular courses or programs, or to higher education generally--particular negative consequences may be experienced by members of identifiable student groups.

Three types of students are generally mentioned as negatively affected.

First, experience has shown that members of minority groups may be adversely affected by testing, due to both cultural biases in testing procedures and to historic deprivations in educational opportunity. Where such inequities are apparent, students may not only be directly affected but may also withdraw from programs because of anticipated negative impacts. In Florida, for example, the CLASP program has resulted in a more than 50% decline in degree-seekers in community college AA Transfer programs (Ciereszko 1987; Losak and Wright 1983).

Second, assessment procedures may not reflect important differences in learning style among students, and may consequently not appropriately classify them as deficient in certain skills.

Finally, most assessment instruments, regardless of their actual content, are in fact predicated on a test-taker's language ability--particularly the ability to read English (Adelman 1988).

This may imply disproportionate negative consequences for those with low verbal skills but with otherwise adequate abilities, or for those whose native language is not English.

b. Faculty Members:

Negative consequences of assessment identified for individual faculty members are as follows:

- Increased burdens involved in designing assessment instruments, administering such instruments, and interpreting results.

Emerging experience indicates that significant amounts of faculty time are involved in designing appropriate assessment activities. Commitments are especially heavy when faculty-designed instruments are used. For institutions that have accounted for such time, estimates of this commitment approximate one quarter of a full-time faculty equivalent term teaching load to develop a local departmental examination or assessment procedure. Institutions such as Kean College (NJ) or Kings College (PA) that rely heavily on faculty scoring of local instruments report heavy time commitments in assessment--approximately eight additional hours per term to grade such instruments. In both cases, however, it is arguable that this investment is part of regular teaching assignments because it is also part of the student grading procedure. Indeed, at an institution like Alverno College, distinctions between "assessment" and "teaching" have no meaning; both are part of the established curriculum. For other institutions, however, assessment may involve an added time commitment on the part of faculty that is seen as essentially unrelated to classroom instruction. This is more likely the case where commercial instruments are used.

- Perceived violations of academic freedom.

Assessment involves establishing inherent limits on what a faculty member can do in his or her classroom. As noted above, one impact is to change curriculum structure and content to ensure greater continuity among courses (and particularly across different sections of the same course). Some faculty may see this as a threat to their individual autonomy as reflected in the concept of academic freedom. It is important to note that no legally sustainable case for violations of academic freedom has historically been heard on this basis, and that the concept refers only to a faculty member's right to express personal opinions in the classroom; no case can be legally made for a faculty member not teaching assigned material, or for not teaching effectively. Nevertheless, confusions over the precise meaning of "academic freedom" in the minds of some faculty often cause notable and important political opposition to assessment.

c. Institutions/Programs:

Negative consequences at the institution or program level associated with establishing assessment programs have been noted in several areas. They include the following:

- Excessive limitations on curriculum content and "teaching to the test."

One claimed benefit of assessment lies in its impact on curriculum--particularly in areas of structure, sequencing and uniform content. Where this is process is deemed excessive, it is also seen as a negative impact. If assessment results are taken too seriously in determining what should be taught, there is a fear that only "measurable" content will be included. If results have significant consequences for the fates of individual students, moreover, incentives are strong to tailor instruction to the examination rather than viewing performance on the examination as representative of a broader range of student knowledge and abilities.

Evidence from Florida indicates that the CLASP program has had a recognizable impact on the teaching of freshman courses in English and Math in Florida public institutions. Higher pass rates on the examinations may be the result, but some faculty fear that areas not assessed by the examination are as a result being crowded out of the curriculum.

- "Opportunity costs" of substantial investments of faculty time.

Time spent by faculty in developing assessment instruments, administering them, and interpreting the results have already been noted as potential negative consequences for individual faculty members. In addition, the institution or program must consider the alternative uses of faculty time that such investments preclude. Generally these are cited in terms of lost time for research and public service activities. While no data is available to estimate the impact of such diverted effort, faculty members at the University of Tennessee, Knoxville--the only public research institution with substantial experience with student assessment--have been reluctant to invest substantially in assessment programs for more than a three-year period. Moreover, where assessment is external to the classroom and also involves a faculty time commitment, less time may be available for actual instruction. In several institutions where commercial examinations are used, for example, one classroom period per term is used to administer the examination--a diversion of from 2-4% of overall instructional time.

- Increases in administrative "overhead" associated with creating a new function.

If assessment is undertaken as a distinct and visible activity, as mandated by many states, it may require establishment of an explicit office and associated reporting structure. This may entail costs and externalities beyond those associated with the tangible assets invested in the program. Examples of such externalities include increases in administrative complexity due to establishment of an additional office or function, difficulties of coordination with other units assigned to collect information about aspects of institutional performance, and possible duplicative reporting burdens on academic units (Ewell 1988). While such additional costs can be minimized through a comprehensive approach to institutional management information and planning functions, emerging experience has shown that incurring such costs is likely--particularly in the early stages of establishing an institutional assessment program.

APPLYING THE FRAMEWORK TO SOME POLICY CHOICES

As emphasized throughout, derivation of a single cost/benefit estimate for all institutional assessment programs is both impossible and inappropriate.

Difficulties in consistently specifying costs and benefits in dollar terms, differences among proposed "assessment" programs in different institutional settings, and differences in the ways key participants value similar outcomes all conspire against such a simple answer.

What is possible is to use identifiable costs, benefits, and externalities to help sort through some proposed policy alternatives. Two such alternatives are briefly discussed in this section, using the proposed framework as a guide.

1. Statewide Testing of Basic Skills:

One leading set of alternatives centers on the perceived need to assess and remediate students entering higher education with respect to such basic skills as reading, writing, and computation. Statewide programs of this kind are currently in place in New Jersey, Tennessee, and Texas, and are being actively discussed in several other states. Basic features of such programs include,

(a) use of a single standardized examination by all institutions in the state,

(b) prohibitions against the use of results to deny admission to institutions,

(c) mandated use of results to place students assessed as deficient into appropriate remediation programs, and

(d) exit testing of students using the same instrument on completion of remediation.

Figure 2 presents major areas of benefit and cost for such a program. Using categories of benefit, cost, and externality discussed in the previous section for each party-at-interest, the figure roughly indicates the presence and intensity of each. Particularly notable are the following:

o Benefits.

Program benefits will occur particularly for individual students in the form of documentable increases in knowledge and skills and in increased chances of graduation. But both benefits, it is important to note, will only occur if remediation and associated placement are also successful--they are not direct results of the assessment program per se. Some benefits should also result for faculty, who are better enabled to teach at the appropriate level rather than being required to constantly remediate in the classroom. Moreover, external constituents and the general public will receive secondary benefits in the form of greater assurances about the skill levels of college students and greater accountability.

o Costs.

Overall dollar costs for a testing program of this kind can be estimated from past experience in New Jersey and emerging experience in Texas. Both incurred initial test development costs in excess of one million dollars. Operating costs are about $9-11/student tested, or about $4/enrolled FTE student. How such costs should be paid is another matter. Both states currently fund the program out of general revenue. This entails a direct cost to taxpayers as well as an opportunity cost to institutions that might have received this funding for alternative purposes. Alternatively, direct costs could be passed on to students in the form of fees. In this case, there is a further choice between spreading the fee across all enrolled students as part of a tuition payment, or applying it only to those tested as they are tested. The latter alternative would have the advantage of clarity, but would be particularly burdensome for those assessed as deficient and forced to leave the institution.

o Externalities.

A program of this kind will probably entail a range of negative externalities. For individual students, all three potential side-effects would be present. Certainly, total test-taking time would increase; evidence from New Jersey suggests, for example, that institutions now administer both the statewide Basic Skills test and their own local placement examinations.

Moreover, many students will be denied their initial choice of classes or programs because of deficient performance; in New Jersey, more than a third of test takers are assessed as deficient in one or more basic skills each year. If deficiencies are detected, directed placement may significantly increase the amount of time it may take a student to obtain a degree. Major negative impacts, however, would likely be initially incurred in the form of faculty opposition and "teaching to the test."

This overall pattern might be significantly changed if particular features of the proposed program were subject to modification. For example, changing the requirement that a single, statewide instrument be used would markedly reduce faculty opposition and teaching to the test. Negative impacts would remain in these areas, but would likely be not so strong. Allowing institutions to use their own instruments, moreover, would also reduce the burden of testing for individual students. It would not, however, provide a much payoff in accountability to the general public as would a program based upon common testing.

Changing the requirement that students be tested on exiting from remediation would also shift the payoff pattern for the program as a whole. Because of a demonstrable association between directed placement and persistence, individual benefits would not be so strong as in the base program, and the benefits associated with assuring external constituents and the public that college students possess basic skills would evaporate. At the same time, such externalities such as teaching to the test and perceived violations of academic freedom would be all but eliminated.

2. Requiring Institutions to Undertake Local Assessment:

As noted earlier, the center of gravity for most state-based assessment efforts has been to require institutions to design and implement their own local assessment programs. Current Board of Regents policy in Arizona is consistent with this thrust. While many variations in what is required are apparent across the eight states where such plans are in place, their general payoff pattern is presented in Figure 3. Once again, standard categories of benefit, cost, and externality are used. Notable features are as follows:

- Benefits.

Most of the documentable benefits of this alternative are centered in the curriculum--particularly in improvements in curricular structure and sequence. Benefits to individual students are certainly present, but documentable increases in knowledge and skill will be difficult to claim. Some external benefits will also be present, but the primary focus on internal evaluation and improvement will also imply that obtained information is less directly useful to external constituents. All these benefits, of course, will depend heavily upon what the institution in fact proposes to do. Absent information on graduate placement, for example, benefits associated with consumer choice will largely disappear. Effective "packaging" of information intended largely for internal management, however, can also serve to demonstrate accountability to the public.

- Costs.

Overall costs for programs of this design are in the standard estimated range of $7-12/FTE student. Once again, however, the question of who should bear these costs has a number of answers. Student fee alternatives, as practiced in South Dakota, seem comparatively inequitable because individual students do not generally receive proportionate direct benefit. Requiring institutions to fully absorb these costs as part of their existing budget, as practiced in Missouri, may require substantial reallocation and associated opportunity costs. Where such programs are fully supported by additional dollars, as for example in Virginia and New Jersey, an additional burden is placed on the taxpayer, who may or may not receive commensurate payoff in the form of accountability and improvements in general welfare. In practice, most states share such costs between institutions and taxpayers--appropriating limited additional funds to support local assessment, or using existing categorical grant or non-base incentive funds to support a range of institutional efforts.

- Externalities.

The most important negative consequences associated with this alternative occur for faculty and for institutions. For faculty, a major consequences is a considerable investment of time in the design of assessment instruments and in scoring and interpreting the results of local examinations. Although each institution is free to choose its own approach, many faculty will also feel threatened in the initial stages of the program. Both these consequences will change depending upon the kinds of assessment instruments used: faculty-designed instruments will increase faculty burden and reduce opposition; commercial standardized tests (even if chosen by faculty themselves) will increase the perceived threat but will substantially reduce direct faculty burden. For the institution, moreover, substantial costs may be incurred in establishing an additional administrative function.

This pattern can also be substantially altered by changing one or more features of program design. For institutions, the payoff structure shifts markedly depending upon the percentage of direct costs that is covered by additional resources. If the full cost of the program must be absorbed, most institutions will see such a program as a "breakeven" proposition at best; most will therefore initially resist its adoption as state policy. For faculty, opposition and burden are directly affected by the kinds of approaches proposed--particularly the degree to which they rest upon standardized testing and the level of choice that faculty are allowed in choosing appropriate assessment instruments and techniques. Emerging experience seems clear on the point that some degree of faculty opposition will be experienced no matter what kind of program is proposed. It is also clear, however, that the greater the degree of faculty involvement, the more likely curricular benefits will be.

For individual students, however, few features of the program's design will cause a shift in preference: most benefits are indirect, and because assessment results are not used to determine the fates of individual students, important externalities are absent. The major exception here is cost, as given uncertain individual payoffs, it will be difficult to argue that individual students should bear a substantial cost burden for this activity.

These two cases can only briefly illustrate the manner in which the particular costs and benefits of any proposed assessment alternative for Arizona might be compared. Naturally, in the absence of a concrete policy proposal on assessment, they will be indicative only. At the general level, however, the framework provided can aid in both identifying the major categories of cost and benefit associated with any assessment approach and in roughly estimating the trade-offs among different posed alternatives.

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FIGURES

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Figure 1

Benefits, Costs, and Externalities of Institutional Assessment

Parties-at-Interest	Benefits	Direct Costs	Externalities
Individual Students	- Increases in knowledge/skill - Increases in graduation/persistence - Increased credibility of degree - Better information for college choice	- Testing Fees ($7-9/student)	- Burdens of additional testing - Loss of access/choice of classes/programs - Loss of access due to biases and inequities
Faculty	- Targeted teaching - Better ability to design examinations		- Burdens of designing and administering instruments - Perceived violations of "academic freedom"
Institutions/ Programs	- Improved curriculum structure and sequence - Improved planning/ resource allocation - Increased faculty time committed to teaching - Enhanced ability to acquire resources	- Full program cost, if unsupported ($7-12/FTE student)	- Narrowed curriculum/ "teaching to the test" - Opportunity costs of faculty time - Increased administrative "overhead"
External Constituents	- Enhanced employee skills • general • job-related - Better employee attitudes toward work		
General Public	- Assurance that tax dollars are well spent - Increases in general welfare	- Additional tax dollars to support total or partial cost of program	

Figure 2

Benefits, Costs, and Externalities of Institutional Assessment
Case 1: Statewide Testing of Basic Skills

Parties-at-Interest		Benefits		Direct Costs		Externalities
Individual Students	++	- Increases in knowledge/skill	+/-	- Testing Fees ($7/entering student)	-	- Burdens of additional testing
	++	- Increases in graduation/persistence			-	- Loss of access/choice of classes/programs
	0	- Increased credibility of degree			-	- Loss of access due to biases and inequities
	0	- Better information for college choice				
Faculty	+	- Targeted teaching			0	- Burdens of designing and administering instruments
	0	- Better ability to design examinations			--	- Perceived violations of "academic freedom"
Institutions/ Programs	0	- Improved curriculum structure and sequence	-	- Full program cost, if unsupported ($3/FTE student)	--	- Narrowed curriculum/ "teaching to the test"
	0	- Improved planning/ resource allocation			0	- Opportunity costs of faculty time
	0	- Increased faculty time committed to teaching			0	- Increased administrative "overhead"
	0	- Enhanced ability to acquire resources				
External Constituents	+	- Enhanced employee skills				
	0	• general • job-related				
	0	- Better employee attitudes toward work				
General Public	+	- Assurance that tax dollars are well spent	-	- Additional tax dollars to support total or partial cost of program ($300,000/year)	0	
	0	- Increases in general welfare			-	

A SURVEY OF ALUMNI, CLASS OF 1981, ARIZONA'S UNIVERSITIES OUTCOMES AND OPINIONS

KATHLEEN CHURCH

ALUMNI SURVEY

METHODS AND MATERIALS

Lists of names and addresses of alumni, baccalaureate class of 1981, were supplied by the alumni associations of the three universities. A random sampling technique was used to select those to be surveyed with the exception that alumni with addresses that placed them outside of the country were not included in the sample.

The survey instrument (see appendix 1) was purchased from the American College Testing Company. Initially, the instrument, along with a cover letter (appendix 2) and a prepaid return envelope were mailed to each individual alumnus included in the sample. The initial mailing was followed by a post-card reminder (appendix 3) mailed to non-respondents after a three week period. Finally, a second survey instrument and 2nd reminder were mailed to all of those who had not responded after an additional three weeks has passed. The response rate is shown in Table 1.

Table 1
Response to Alumni Survey

	Sample Size	Returned as Undeliverable	Number of Responses	Percent Response (%)
NAU	800	52	364	49
ASU	1000	71	403	43
UA	1000	63	350	37

The response rate was considered to be good to excellent by the professionals at the American College Testing Service in comparison to other alumni surveys that had been conducted by them under contract to other universities. Tables 2, 3 and 4 compare the characteristics of those who responded to the survey to the population from which the sample was drawn, the class of 1981. Inspection of tables 2, 3, and 4 reveals that for the most part, the samples reflect the populations.

There are several limitations that must be considered when reviewing the results the survey before drawing conclusions. Firstly, individuals who respond to surveys may hold different opinions from those who do not respond. It would be very worth while to obtain the opinions of the non-respondents. While this is

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Table 2

A Comparison of the Sample to the General Characteristics of Arizona State University, Class of 1981

	Population*	Sample
Males	51.0	49.5
Females	49.0	50.5
Black	1.4	1.0
Native American	.4	1.2
Asian	2.5	.7
Hispanic	3.3	4.0
White/Other	92.8	93.1
Agriculture**	1.8	1.0
Architecture	2.3	1.7
Business	28.5	28.8
Communications	5.7	6.0
Education	13.4	17.4
Engineering/Computer Science	10.8	13.3
Fine/Applied Arts	5.3	3.7
Home Economics	2.7	1.7
Community Service	4.8	5.0
Liberal Arts and Sciences	19.2	16.2
Health Professionals	4.8	5.0

*Drawn from 1981 HEGIS Report
**Fact Book, Degrees Granted

Table 3

A Comparison of the Sample to the General Characteristics of University of Arizona, Class of 1981

	Population	Sample
Males	*	52.3
Females	*	47.7
Black	1.4**	1.1
Native American	0.8	0.6
Asian	0.9	2.0
Hispanic	4.6	8.9
White/Other	92.3	87.4
Agriculture***	7.0	5.1
Architecture	2.4	2.3
Business	20.1	17.7
Communications	3.1	3.7
Education	12.3	14.0
Engineering	11.4	11.1
Fine Arts	4.9	4.0
Home Economics	5.1	3.4
Health Professions	5.2	6.0
Liberal Arts and Sciences/Other	28.4	32.7

*Information not located
**1982-83 information, 1980-81 not located
***UA Fact Book, Degrees Granted, 1981

Table 4

A Comparison of the Sample to the General Characteristics of Northern Arizona University Class of 1981

	Population	Sample
Males	*	46.8
Females	*	53.2
Black	1.3**	0.0
Native American	4.2	7.1
Asian	5.2	3.6
Hispanic	1.3	0.8
White/Other	87.9	88.5
Agriculture***	3.4	4.4
Business	15.3	13.8
Communication	5.2	6.2
Education	20.1	28.0
Engineering/Computer Science	5.1	8.1
Fine/Applied Arts	5.3	3.7
Home Economics	2.3	0.3
Community Service	10.3	7.6
Health Professionals	8.2	6.7
Liberal Arts and Science/Other	24.8	21.2

*Information not located
**1982-83 Data, 1980-81 data not located
***NAU Fact Book, Degrees Granted, 1981

possible with conventional survey techniques, it is an expensive proposition, both in time and money, and could not be undertaken within the time frame and budget for this study. Secondly, the survey included only those who graduated with a bachelors degree. Individuals who had "dropped out or stopped out" may have very different opinions from those who persevered. A university that is serious about using information supplied by alumni to improve its programs, should consider obtaining opinions from those who exit the system as well as those who persist to graduation.

An additional factor should be considered before drawing any conclusions. For comparison, data from other colleges and universities supplied by the American College Testing Service were used. The data was from 41,818 alumni records obtained from 101 colleges and universities that administered the ACT alumni survey. Various subgroups of the data base were also available. The colleges represented in the comparative data include both large and small, public and private institutions from 37 states. Several qualifications for the "normative" data are presented by the testing service:

"The data are not based on a random or preselected sample of alumni or colleges. While a wide variety of colleges are represented in the report, ACT did not attempt to alter the sample to provide a nationally representative report. The survey instruments were administered in different ways, to different groups of alumni from the various institutions represented in the report....The effects of these varying administration modes and response rates on the normative data are unknown"

Despite the caveats, the alumni who chose to respond to the survey represent an important group who are interested enough in their alma mater to have responded and in many cases, offered constructive criticisms. Their voices should heard, their opinions valued and their suggestions taken into consideration in the ongoing process to improve undergraduate education.

WHERE ARE THEY NOW AND WHAT ARE THEY DOING?

The majority of the class of 1981 are living in Arizona although a surprisingly high number have left the state (Table 5).

Table 5

Alumni Living Inside or Outside of Arizona

	ASU		NAU		UA	
	in* (%)	out** (%)	in (%)	out (%)	in (%)	out (%)
TOTAL	58.3	41.4	60.4	38.5	54.9	44.9
MALES	49.3	50.2	52.6	47.4	47.9	51.9
FEMALES	67.3	32.7	68.6	31.4	62.7	37.3
MAJORITY	58.2	41.5	57.6	42.4	51.2	48.5
MINORITY	60.7	39.3	88.1	11.9	70.5	29.5
RESIDENT	70.7	29.3	66.6	33.4	60.7	39.0
NONRESIDENT	23.5	76.5	17.9	82.1	25.0	75.0

*CURRENTLY LIVING IN ARIZONA
** CURRENT LIVING OUT OF ARIZONA

The data clearly suggests that for all three universities, respondents that were most likely to stay in Arizona were females, minorities and residents of Arizona. Conversely, respondents whose residency status was "out of state" while attending the university tended not to stay in Arizona after completing a degree. The latter observation, if proven to be general, may have implications when creating policy concerning non-resident students. In addition, respondents who attended NAU are most likely, while those who attended UA are least likely, to live in Arizona after completing a baccalaureate degree.

Table 6

Employment Status of Respondent Alumni

	ASU (%)	NAU (%)	UA (%)	NATIONAL (%)
Employed full time	69.7	68.4	70.6	67.0
Self Employed	7.2	6.6	7.1	4.9
Employed part time	4.0	4.9	3.4	5.9
Attending College	2.0	3.0	3.4	2.7
Working and attending college	6.7	8.2	4.3	6.7
Armed Forces	0.7	1.4	2.0	0.7
Home and Family	5.0	4.4	5.4	8.0
Unemployed	1.0	0.8	1.4	1.4
Other	1.2	0.5	0.6	1.0
Blank	2.5	1.6	1.7	1.7

Respondents were ask "Which of the following best describes what you are currently doing? Table 6 summarizes the response to that Question by alumni from all three institutions.

Note that the respondents from the three institutions are remarkably similar to each other but perhaps less similar to respondents from other universities. More Arizona alumni are self employed, fewer are employed part-time, and fewer are involved full time with home and family. However, there are some interesting and significant differences in the career paths among the graduates of the three universities (Table 7).

Table 7

Current Occupations of Class of 1981 Respondent Alumni

Career	ASU (%)	NAU (%)	UA (%)
Business/ Commerce	36.5	18.4	22.9
Science/ Engineering	12.9	12.3	18.8
Education	12.4	21.7	9.1
Health Professions	4.5	8.2	9.4
Social Sciences	5.0	4.9	7.1
Trade/Industrial and Technical	4.0	3.0	1.1
Community Service	3.2	11.5	5.7
Communications/ Other	2.7	2.2	1.1
No Response	12.9	11.0	12.0

NAU Respondents were the most likely to have careers in education and community service while ASU respondents were most likely to be in Business. UA respondents were more likely to have careers in Science and Engineering than ASU or NAU respondents. It will be interesting to learn if the recent emphasis on engineering excellence at ASU has altered the career pattern of graduates from that institution.

Perhaps a more interesting observation is the employment pattern of the various subgroups of respondents from Arizona public universities (Table 8). Females and minorities tend to be concentrated in education and business, although for minorities, to a lesser extent in business than in education. Males on the other hand, as might be expected, are concentrated in business and in science and engineering. Individuals trained in business and in science/engineering are more likely to leave the state while teachers are more likely to stay in Arizona.

Table 8

Employment Pattern of Respondent Alumni

	Males	Females	Minority	Living in State	Living out of state
Business/ Commerce	30.2	22.7	18.4	23.8	30.2
Science/ Engineering	23.1	6.1	6.1	11.3	19.4
Education	8.9	21.3	34.2	20.2	7.9
Health Professions	4.9	10.2	6.1	8.2	5.8
Social Science	4.7	6.7	6.1	5.7	5.6
Trade/Indust. and Tech.	4.1	1.5	2.6	1.9	4.1
Community Service	7.5	5.8	9.6	7.3	5.8
Communications	1.3	2.9	3.5	1.7	2.6
Other/ No Response	7.7	16.0	7.0	12.7	10.8

Students who graduated from UA in 1981 were more likely to have received an advanced degree than alumni of the other institutions (Table 9). Roughly half of the advanced degrees obtained by NAU graduates were in education while alumni of UA and ASU were more likely to pursue graduate studies in other areas (Table 9).

Table 9

Highest Degree Obtained by Alumni

	ASU	NAU	UA	National
Bachelor's	78.4	67.9	60.6	65.7
Master's	14.4	24.7	26.0	24.3
Education	4.0	12.1	6.0	-*
Other	10.0	12.1	20.0	-
Doctorate	3.5	2.7	4.6	2.6
Education	0.1	1.4	0.1	-
Other	3.4	1.3	4.5	-
Other	0.2	1.4	0.6	0.5

*Information not available

Interestingly, a greater proportion of minorities who responded had received master's degrees than responding white alumni although a lesser proportion had received doctor's or professional degrees (Table 10).

THE EARNING POWER OF ALUMNI OF ARIZONA UNIVERSITIES

The information we received about the income of the alumni should be viewed with caution. Self reported income may well be inflated to a certain degree and many respondents declined to supply information. Nevertheless, inspection of Figure 1 indicates that the 1981 graduates from Arizona's universities have on average, greater earning power than the comparative group which is comprised of individuals having completed their degrees from 5 to 9 years ago (Fig. 1). However, the observation should be viewed with caution since the national group is comprised of individuals from large and small, public and private institutions, and from many states. In a very real sense, the group is not comparable to any of the three Arizona universities.

Figure 1.

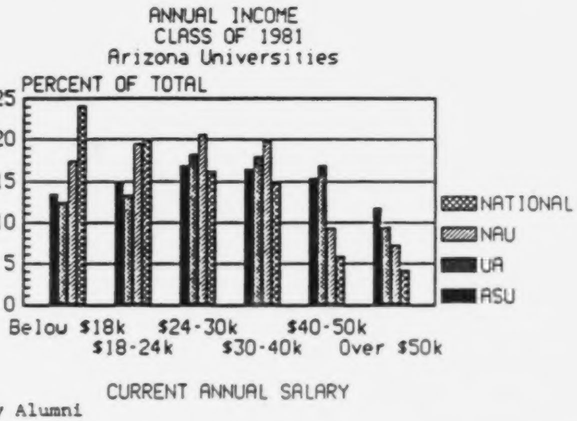


Table 10

Highest Degree Obtained by Majority and Minority Alumni

	Minority	Majority
	(%)	(%)
Bachelor's	66.7	70.7
Master's	26.3	20.9
Doctorate	2.3	3.3
Professional	3.5	4.1

Among Arizona the universities, ASU and UA alumni are represented most frequently among those with incomes over $40,000 while graduates of NAU are represented most frequently among the middle incomes and lower incomes (Figure 1).

Other general observations include: 1) Males, on average, earn more than females. 2) Majority alumni earn more than minority alumni, and 3) Alumni who live out of state enjoy higher salaries than those who live in state (Figure 2). The latter observation is not surprising when it is considered that a disproportionate percentage of individuals whom we export are in business or have careers in science and engineering. Females and minorities are more likely to remain in Arizona than are white males. Both groups are more likely to be educators, a profession that unfortunately is known for its lower salaries compared to the majority of occupations preferred by white males.

Three-fourths of the alumni from NAU and UA felt that their respective universities adequately prepared them for post-graduation employment while the comparable figure for ASU was 69%. Despite their overall higher salaries, ASU alumni were more inclined to feel underemployed. Of the three institutions, NAU's alumni were most satisfied with the challenges of their jobs.

THE QUALITY OF UNDERGRADUATE EDUCATION AS PERCEIVED BY ALUMNI

Although alumni who responded from Northern Arizona University had significantly less earning power than alumni of the larger institutions, they

ANNUAL INCOME, CLASS OF 1981
Arizona's Universities

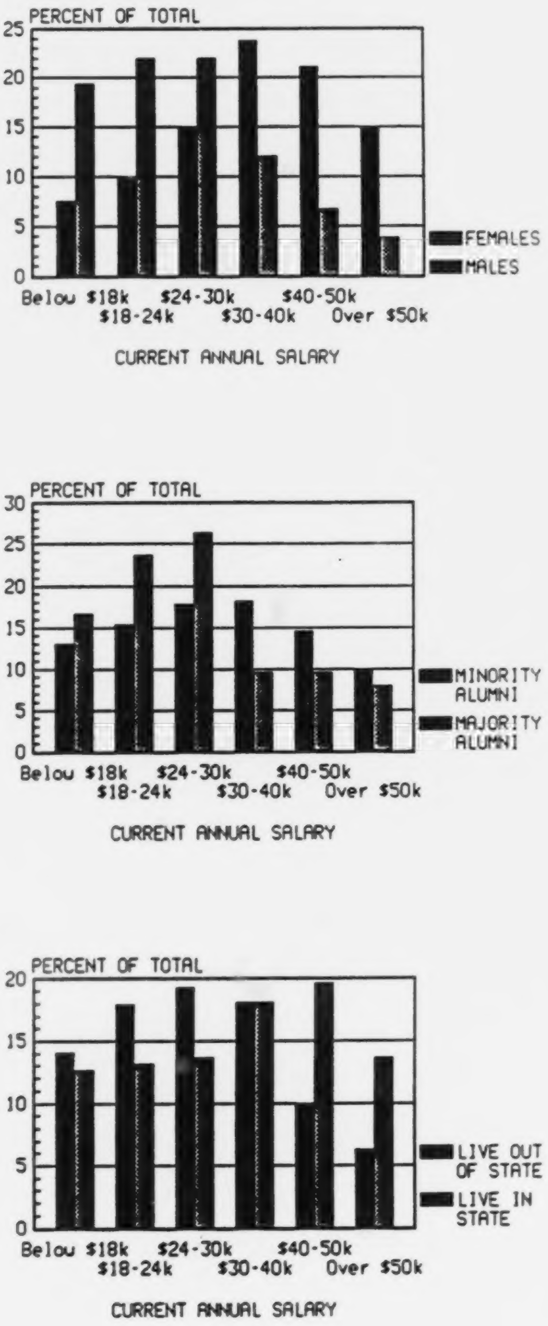
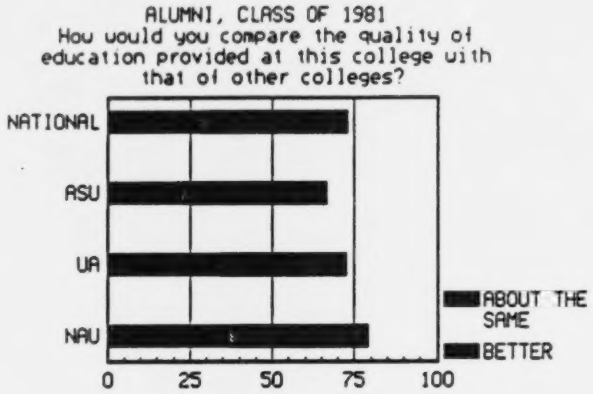


Figure 2

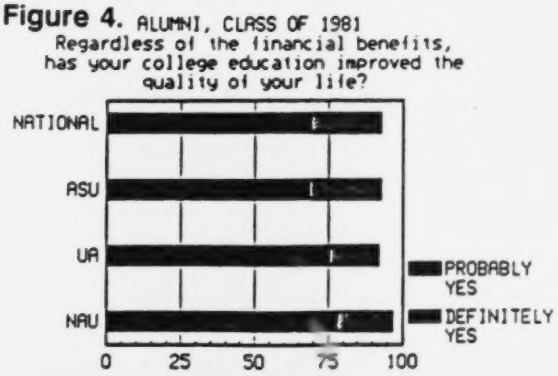
were more impressed with the quality of their undergraduate education than graduates of the other institutions. The overall response from all three institutions was more positive than negative, but NAU alumni were the most positive while those from ASU were the least positive. Those surveyed were ask to respond to the question "How would you compare the quality provided at this college with that of other colleges? (Figure 3). Possible answers included better, about the same, uncertain and worse.

Figure 3.



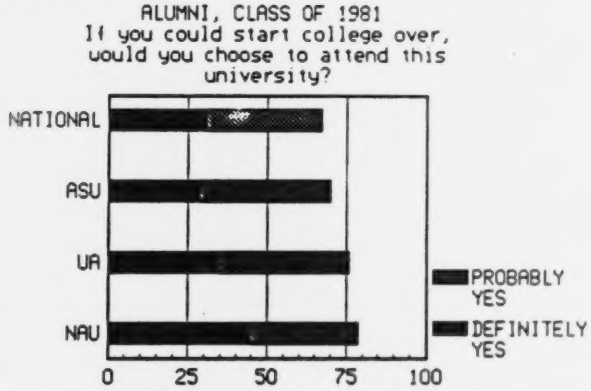
Respondent males who graduate from Arizona's universities were in general, more positive than females and with one exception (UA) majority respondents were more positive than minority respondents. When asked the question "Regardless of the financial benefits, has your college education improved the quality of your life?", the answer was a resounding yes (Figure 4).

Figure 4.



Finally, when ask the question "If you could start college over, would you choose to attend the same university?", NAU respondents were again the most positive, followed in order by UA and ASU (Figure 5).

Figure 5.



The remainder of the respondents answered uncertain, probably no or definitely no.

VALUE ADDED TO PERSONAL GROWTH

A series of 24 questions were posed to alumni that were designed to determine perceptions about the universities' contribution to personal growth. The question posed---"How much did your education at this college contribute to your personal growth in the following area?"---was followed by a list of 24 items (see appendix 1). Alumni were ask to respond to each of the items with 1. very little 2. somewhat or 3. very much. Each question as posed is attempting to determine the "value-added" by university experience to specific areas of personal growth. For example, a student who writes well before entering the university and exits the university still writing well may consider that the university contributed very little to his/her writing ability. On the other hand a student who entered with less than adequate writing skills and leaves with adequate writing skills may consider that the "value added" by the university to be very much. Because of the nature of the question, it is quite possible that a highly selective institution with a homogeneous student body would receive less favorable responses than a community college whose students are starting from a considerably lower level and thus have "more room for improvement". Such questions and their responses are subject to multiple interpretations and the interpretations should be viewed cautiously.

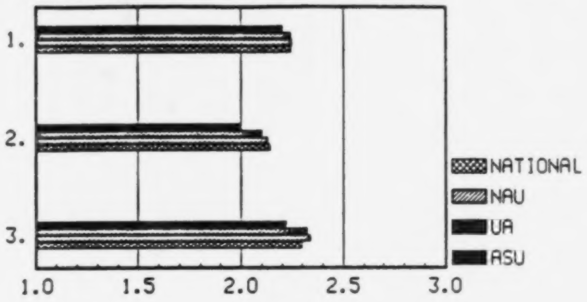
The results of our alumni survey could be interpreted to suggest that respondents from Arizona universities are about average in their perceptions of what the universities contributed to their personal growth when compared to 8,500 alumni from other institutions with enrollments over 10,000. While the vast majority of the alumni recognized contributions by the three universities, NAU students, in general, gave more credit to their alma mater than did their counterparts from UA and ASU. Alumni from ASU were, in general, least favorable. Figure 6 illustrates the responses to some of the more important questions.

A very important question where the response of the alumni from Arizonas' universities seemed more negative than their counterparts from other institutions was that concerning the contribution of the universities to lead and guide others (Figure 7). This observation may be significant in view of the fact that our interviews with employers of graduates also suggested that leadership abilities were often substandard in the graduates. These two observations perhaps suggest that more opportunities for developing leadership in our students should be made available.

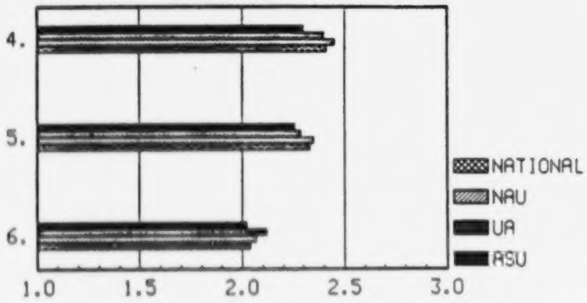
FIGURE 6

Responses to Selected Personal Growth Items
1. Very little 2. Somewhat 3. Very much

How much did your college education contribute to your personal growth in: 1. writing and 2. speaking effectively? 3. understanding written information?



How much did your university contribute to your personal growth in: 4. learning on your own? 5. planning? 6. knowing different cultures and philosophies



How much did your college education contribute to your personal growth in: 8. Recognizing assumptions, making logical inferences and reaching conclusions? 9. appreciating the arts?

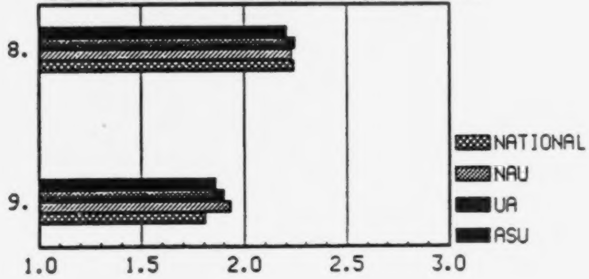
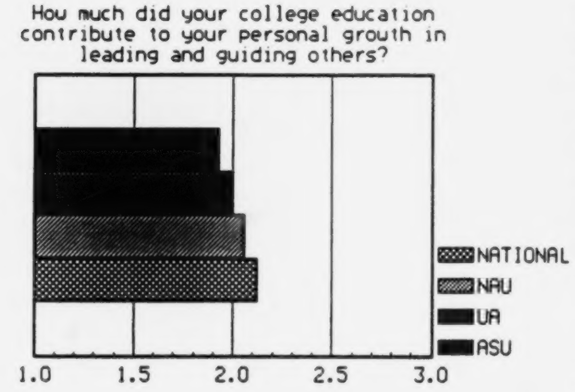
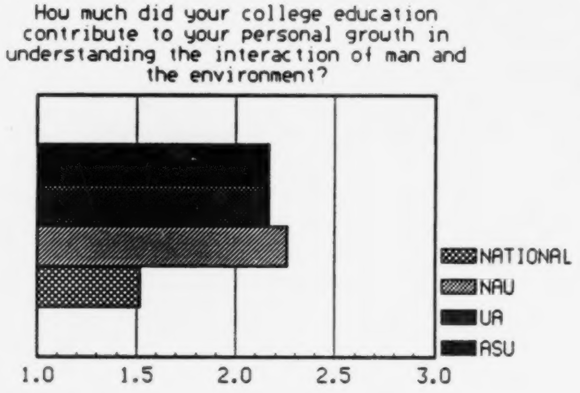


Figure 7.



On the other hand, alumni from Arizona's universities were much more positive than the national group in crediting the universities for developing their understanding of the interactions of man and the environment (Figure 8).

Figure 8.

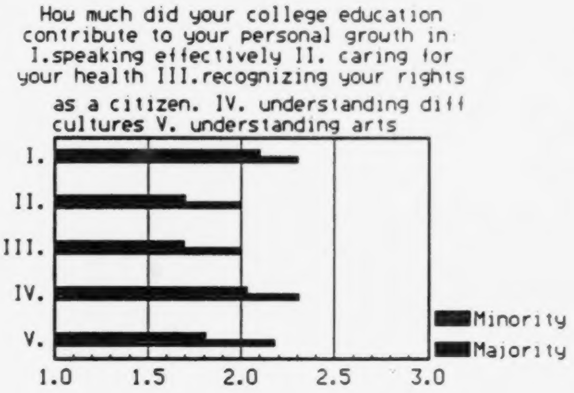


It cannot be emphasized too strongly that it would have been more informative if we had truly comparative information for each of the three universities. For example, it may be that ASU would have fared better if compared to urban institutions, with large enrollments, and a majority of commuter students. UA would have been better compared to other major Research I universities with substantial residential and commuter populations, and NAU to medium sized, residential, comprehensive universities. Nevertheless, the data do provide a substantial bench-mark from which the universities can measure progress in years to come.

VALUE ADDED TO MINORITY STUDENTS

The evidence is overwhelming that minority students are underrepresented among recipients of degrees from Arizona's universities and as stated before, minorities in general are less positive about the quality of education they are receiving. Nevertheless, information from the alumni survey indicate that those minority students who do persist to graduation consider that the universities have contributed more to their personal growth in many areas than do white (majority) alumni. On 22 of the 24 items, this proved to be the case. Some of the more extreme examples are shown in Figure 9.

Figure 9.



OBSERVATIONS AND DISCUSSION

Many of the respondents wrote comments to the Task Force. While the majority were positive, a few were negative and most offered constructive criticisms. A theme running through the comments from alumni from all three universities was the suggestion that there is a need for more career counseling, instruction that is more applicable to the working world and more opportunities for "coop" experiences. UA respondents were more likely to perceive that the faculty were disinterested in or incapable of teaching undergraduates. ASU respondents were most often concerned about the size, red tape and unhelpful atmosphere of the university and NAU alumni more often expressed dissatisfaction with career advising. On the other hand, NAU respondents applauded the excellence of the faculty and the individual attention that they received. One ASU alumnus stated "ASU taught me to go after what I wanted on my own for myself. This was because of the enormous size of the school". A UA alumnus said "Excellent school! I learned an incredible amount that formed a solid foundation for me to continue my learning process! I would not change anything. Has one of the best libraries and faculty that I have had the chance to experience".

An impression is gained from the alumni survey that an alumni's perception of the quality of the education provided is inversely related to the size of the institution, at least in Arizona. It may well be that the time has come to cap enrollments at Arizona's universities in order to preserve and enhance the quality of undergraduate education.

CONCLUSIONS

1. Respondents to the alumni survey perceive that the quality of undergraduate education in Arizona's universities is neither better nor worse than that perceived by alumni from a wide variety of colleges and universities throughout the United States.

2. NAU respondents were more favorable about the quality of their undergraduate education than were respondents from UA or ASU. ASU respondents were the least favorable.

3. ASU and UA respondents were more highly represented among higher income groups than were NAU respondents. Male alumni command higher salaries than female alumni, majority higher than minority alumni, and alumni living out-of-state higher than alumni living in-state.

4. Minority respondent alumni consider that the universities have contributed more to their personal growth than majority alumni, but are less favorable about the quality of undergraduate education

5. A high proportion of alumni reside in a state other than Arizona. Female, minority, and "resident" respondents were more likely to remain in Arizona than were male, majority and "nonresident" respondents. Individuals with degrees in business or science/engineering were more likely to leave the state. Individuals with degrees in education were more likely to remain in state.

RECOMMENDATION

- The universities should periodically survey alumni including those who fail to complete a degree to determine if the current emphasis on quality undergraduate education is changing the perception alumni hold about the institutions.

APPENDIX 1

802

ALUMNI SURVEY

DIRECTIONS: The information you supply on this questionnaire will be kept completely confidential. However, if any item requests information that you do not wish to provide, please feel free to omit it. Your Social Security number is requested for research purposes only and will not be listed on any report.

Please use a soft (No. 1 or 2) lead pencil to fill in the oval indicating your response. DO NOT use a ball-point pen, nylon-tip or felt-tip pen, fountain pen, marker, or colored pencil. Some items may not be applicable to you or to this college. If this is the case, skip the item or mark the "Does Not Apply" option. If you wish to change your response to an item, erase your first mark completely and then blacken the correct oval. Do not mark more than ONE response per item unless you are instructed to do so.

SECTION I—BACKGROUND INFORMATION

Begin by writing your Social Security number in the large boxes at the top of Block A. Then, in the column below each box, blacken the appropriate oval. Complete the remaining blocks by blackening the single most appropriate oval in each case.

A SOCIAL SECURITY NUMBER (Identification Number)

			–			–				
⓪	⓪	⓪		⓪	⓪		⓪	⓪	⓪	⓪
①	①	①		①	①		①	①	①	①
②	②	②		②	②		②	②	②	②
③	③	③		③	③		③	③	③	③
④	④	④		④	④		④	④	④	④
⑤	⑤	⑤		⑤	⑤		⑤	⑤	⑤	⑤
⑥	⑥	⑥		⑥	⑥		⑥	⑥	⑥	⑥
⑦	⑦	⑦		⑦	⑦		⑦	⑦	⑦	⑦
⑧	⑧	⑧		⑧	⑧		⑧	⑧	⑧	⑧
⑨	⑨	⑨		⑨	⑨		⑨	⑨	⑨	⑨

B AGE

- ○ 20 or under
- ○ 21 or 22
- ○ 23 or 24
- ○ 25 or 26
- ○ 27 to 29
- ○ 30 to 39
- ○ 40 to 61
- ○ 62 or over

C RACIAL/ETHNIC GROUP

- ○ Afro-American/Black
- ○ American Indian or Alaskan Native
- ○ Caucasian-American/White
- ○ Mexican-American/Chicano
- ○ Asian-American, Oriental, or Pacific Islander
- ○ Puerto Rican, Cuban, or Other Hispanic Origin
- ○ Other
- ○ Prefer Not to Respond

D HOW MANY YEARS HAS IT BEEN SINCE YOU GRADUATED FROM THIS COLLEGE? (To the Nearest Year)

- ○ Less Than 1 Year
- ○ 1 Year
- ○ 2 Years
- ○ 3 Years
- ○ 4 Years
- ○ 5 to 9 Years
- ○ 10 or More Years

E INDICATE THE HIGHEST DEGREE YOU NOW HOLD

- ○ Associate Degree
- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Doctor's Degree
- ○ Professional Degree
- ○ Other

F INDICATE YOUR MAJOR AT THIS COLLEGE

Using the List of College Majors and Occupational Choices included with this questionnaire, find the 3-digit code for your college major, write it in the boxes above and then blacken the appropriate oval in the column below each box.

⓪	⓪	⓪
①	①	①
②	②	②
	③	③
	④	④
	⑤	⑤
	⑥	⑥
	⑦	⑦
	⑧	⑧
	⑨	⑨

G SEX

- ○ Male
- ○ Female

H WHAT WAS YOUR PRIMARY ENROLLMENT STATUS AT THIS COLLEGE?

- ○ Full-Time Student
- ○ Part-Time Student

I WERE YOU MARRIED AT THE TIME YOU ATTENDED THIS COLLEGE?

- ○ Yes
- ○ No

J WHAT WAS YOUR RESIDENCE CLASSIFICATION AT THIS COLLEGE?

- ○ In-State Student
- ○ Out-of-State Student
- ○ International Student (Not U.S. Citizen)

K HOW MANY YEARS DID YOU ATTEND THIS COLLEGE (To the Nearest Year)

- ○ 1 Year
- ○ 2 Years
- ○ 3 Years
- ○ 4 Years
- ○ 5 or More Years

L WHERE DO YOU CURRENTLY LIVE?

- ○ In the State in Which This College Is Located
- ○ In Another State or Country

M DO YOU PLAN TO ATTEND THIS COLLEGE IN THE FUTURE?

- ○ Yes
- ○ Undecided
- ○ No

SECTION II—CONTINUING EDUCATION

Complete this section only if you have continued your formal education since graduating from this college. If you have not, skip to Section III.

A WHAT IS THE MAJOR REASON YOU CONTINUED YOUR EDUCATION? (Mark Only ONE Oval)

- ○ To Satisfy Job Career Requirements
- ○ To Learn a New Occupation
- ○ To Increase Earning Power
- ○ To Obtain or Maintain a License or Certification
- ○ For General Self-Improvement
- ○ Other

B MAJOR AREA OF STUDY SINCE GRADUATING FROM THIS COLLEGE

Use the List of College Majors and Occupational Choices to indicate your most recent area of study

⓪	⓪	⓪
①	①	①
②	②	②
	③	③
	④	④
	⑤	⑤
	⑥	⑥
	⑦	⑦
	⑧	⑧
	⑨	⑨

C HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR CONTINUING EDUCATION?

- ○ Exceptionally Well
- ○ More Than Adequately
- ○ Adequately
- ○ Less Than Adequately
- ○ Very Poorly

D WHAT IS THE HIGHEST DEGREE YOU PLAN TO OBTAIN?

- ○ Associate Degree
- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Doctor's Degree
- ○ Professional Degree
- ○ Other
- ○ I Do Not Plan to Obtain Another Degree

E HOW MANY CREDIT HOURS HAVE YOU EARNED SINCE GRADUATING FROM THIS COLLEGE?

- ○ 10 or Fewer
- ○ 11 to 20
- ○ 21 to 30
- ○ 31 to 40
- ○ 41 to 50
- ○ 51 to 60
- ○ Over 60
- ○ I Am Not Taking Courses for Credit

F WHAT HAS BEEN YOUR PRIMARY ENROLLMENT STATUS DURING YOUR CONTINUING EDUCATION?

- ○ Full-Time Student
- ○ Part-Time Student

SECTION III—COLLEGE EXPERIENCES

Please complete each of the following questions related to your education at this college:

A INDICATE YOUR RATING OF THIS COLLEGE AT THE TIME YOU APPLIED FOR ADMISSION

- ○ It Was My First Choice
- ○ It Was My Second Choice
- ○ It Was My Third Choice
- ○ It Was My Fourth Choice or Lower

B IF YOU COULD START COLLEGE OVER, WOULD YOU CHOOSE TO ATTEND THIS COLLEGE?

- ○ Definitely Yes
- ○ Probably Yes
- ○ Uncertain
- ○ Probably No
- ○ Definitely No

C IF YOU COULD START COLLEGE OVER, WOULD YOU CHOOSE TO GRADUATE WITH THE SAME MAJOR?

- ○ Definitely Yes
- ○ Probably Yes
- ○ Uncertain
- ○ Probably No
- ○ Definitely No

D HOW WOULD YOU COMPARE THE QUALITY OF EDUCATION PROVIDED AT THIS COLLEGE WITH THAT OF OTHER COLLEGES?

- ○ Better
- ○ About the Same
- ○ Worse
- ○ Unable to Judge

E REGARDLESS OF THE FINANCIAL BENEFITS, HAS YOUR COLLEGE EDUCATION IMPROVED THE QUALITY OF YOUR LIFE?

- ○ Definitely Yes
- ○ Probably Yes
- ○ Uncertain
- ○ Probably No
- ○ Definitely No

F WHAT WAS YOUR PRIMARY REASON FOR ATTENDING THIS COLLEGE? (Blacken Only ONE Oval)

- ○ Cost
- ○ Admissions Standards
- ○ Size
- ○ Social Atmosphere
- ○ Location
- ○ Type of Programs Available
- ○ Academic Reputation
- ○ Availability of Scholarship or Financial Aid
- ○ Advice of Parents or Relatives
- ○ Advice of High School Personnel
- ○ To Be with Friends
- ○ Other

G INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR SOURCE, MINOR SOURCE, OR NOT A SOURCE OF FUNDS FOR YOUR COLLEGE EDUCATION

MAJOR SOURCE	MINOR SOURCE	NOT A SOURCE	
○	○	○	Parents or Relatives
○	○	○	Personal Savings
○	○	○	Summer Employment
○	○	○	Employment at College
○	○	○	Spouse
○	○	○	VA Benefits
○	○	○	Social Security Benefits
○	○	○	Student Loans (NDSL, etc.)
○	○	○	Scholarships
○	○	○	Educational Grants (BEOG, SEOG, etc.)

H RATE EACH OF THE FOLLOWING ALUMNI ASSOCIATION PROGRAMS AND SERVICES AT THIS COLLEGE

VERY GOOD	FAIR	POOR	NO OPINION	DOES NOT APPLY	
○	○	○	○	○	Publications
○	○	○	○	○	Homecoming Activities
○	○	○	○	○	Fund Raising Programs
○	○	○	○	○	Chapter Meetings
○	○	○	○	○	Tour Programs

I HOW MUCH DID YOUR EDUCATION AT THIS COLLEGE CONTRIBUTE TO YOUR PERSONAL GROWTH IN EACH OF THE FOLLOWING AREAS?

VERY MUCH	SOMEWHAT	VERY LITTLE	
○	○	○	1 Writing effectively
○	○	○	2 Speaking effectively
○	○	○	3 Understanding written information
○	○	○	4 Working independently
○	○	○	5 Managing personal/family finances
○	○	○	6 Learning on your own
○	○	○	7 Understanding graphic information
○	○	○	8 Using the library
○	○	○	9 Following directions
○	○	○	10 Understanding consumer issues
○	○	○	11 Caring for your own physical and mental health
○	○	○	12 Working cooperatively in a group
○	○	○	13 Organizing your time effectively
○	○	○	14 Recognizing your rights, responsibilities, and privileges as a citizen
○	○	○	15 Planning and carrying out projects
○	○	○	16 Understanding and applying mathematics in your daily activities
○	○	○	17 Understanding different philosophies and cultures
○	○	○	18 Persisting at difficult tasks
○	○	○	19 Defining and solving problems
○	○	○	20 Understanding the interaction of people and their environment
○	○	○	21 Leading/guiding others
○	○	○	22 Recognizing assumptions and making logical inferences in reaching correct conclusions
○	○	○	23 Understanding and appreciating the arts
○	○	○	24 Understanding and applying scientific principles and methods

SECTION IV—EMPLOYMENT HISTORY

Please respond to the following questions related to your employment since you graduated from this college. Complete **only** the parts of this section that apply to you

PART A: TO BE COMPLETED BY ALL ALUMNI

A WHICH OF THE FOLLOWING BEST DESCRIBES WHAT YOU ARE CURRENTLY DOING? (Blacken Only ONE Oval)

- ○ Employed Full Time
- ○ Employed Part Time
- ○ Self-Employed (Farm or Business Owner, etc.)
- ○ Serving in the Armed Forces
- ○ Continuing My Education
- ○ Employed and Continuing My Education
- ○ Caring for a Home/Family
- ○ Unemployed
- ○ Other

PART B: COMPLETE THE FOLLOWING QUESTIONS ONLY IF YOU HAVE EVER HELD A *FULL-TIME* JOB SINCE GRADUATING FROM THIS COLLEGE

B FROM WHICH SOURCE DID YOU LEARN ABOUT THE FIRST JOB YOU HELD AFTER GRADUATING FROM THIS COLLEGE? (Blacken Only ONE Oval)

- ○ College Placement Office
- ○ College Counselor Adviser
- ○ Faculty at the College
- ○ Parent or Relative
- ○ Newspaper/Trade Publication
- ○ Professional Meeting
- ○ Another Student Friend
- ○ Recruited by Employer
- ○ Public Private Employment Agency
- ○ Other

C INDICATE WHETHER EACH OF THE FOLLOWING WAS A MAJOR PROBLEM, MINOR PROBLEM, OR NOT A PROBLEM IN OBTAINING YOUR FIRST JOB AFTER GRADUATION

MAJOR PROBLEM	MINOR PROBLEM	NOT A PROBLEM	
○	○	○	Deciding What I Wanted to Do
○	○	○	Knowing How to Find Job Openings
○	○	○	Scheduling Interviews
○	○	○	Writing a Resume Vita or Letter of Introduction
○	○	○	Finding a Job That Paid Enough
○	○	○	Completing Job Applications
○	○	○	Finding a Job for Which I Was Trained
○	○	○	Finding a Job Where I Wanted to Live
○	○	○	Finding the Kind of Job I Wanted
○	○	○	Race Sex Discrimination

D WHAT WAS YOUR ANNUAL SALARY/INCOME IN THE FIRST JOB YOU HELD AFTER COLLEGE?

- ○ Less than $6,000
- ○ $6,000 to $8,999
- ○ $9,000 to $11,999
- ○ $12,000 to $14,999
- ○ $15,000 to $17,999
- ○ $18,000 to $20,999
- ○ $21,000 to $23,999
- ○ $24,000 to $26,999
- ○ $27,000 to $29,999
- ○ $30,000 to $39,999
- ○ $40,000 to $50,000
- ○ Over $50,000

PART B: CONTINUED

E HOW LONG DID IT TAKE YOU TO OBTAIN YOUR FIRST FULL-TIME JOB AFTER LEAVING THIS COLLEGE?

- ○ Obtained the Job Prior to Leaving College
- ○ Less Than One Month
- ○ 1 to 3 Months
- ○ 4 to 6 Months
- ○ 7 to 12 Months
- ○ Over 12 Months

F INDICATE THE NUMBER OF FULL-TIME JOBS YOU HAVE HELD SINCE LEAVING THIS COLLEGE

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or More

PART C: COMPLETE THESE QUESTIONS ONLY IF YOU ARE *CURRENTLY UNEMPLOYED*

G INDICATE THE PRIMARY REASON YOU ARE NOW UNEMPLOYED

- ○ Have Been Unable to Find A Full-Time Job Since College
- ○ Was Laid Off by Employer
- ○ Quit to Find Another Job
- ○ Health Personal Reasons
- ○ Do Not Desire Employment at This Time
- ○ Other

H HOW LONG HAVE YOU ACTIVELY BEEN SEEKING EMPLOYMENT?

- ○ [illegible]
- ○ Less Than 1 Month
- ○ 1 to 3 Months
- ○ 4 to 6 Months
- ○ 7 to 12 Months
- ○ Over 12 Months

I HAVE YOU SOUGHT HELP FROM THIS COLLEGE'S PLACEMENT OFFICE?

- ○ Yes, It Has Been Helpful
- ○ Yes, But It Has Not Been Helpful
- ○ No

PART D: COMPLETE THESE QUESTIONS ONLY IF YOU ARE *CURRENTLY EMPLOYED*

J INDICATE YOUR CURRENT OCCUPATION

Use the List of College Majors and Occupational Choices to indicate your current occupation

☐	☐	☐
⓪	⓪	⓪
①	①	①
②	②	②
	③	③
	④	④
	⑤	⑤
	⑥	⑥
	⑦	⑦
	⑧	⑧
⑨	⑨	⑨

K WHAT IS YOUR CURRENT ANNUAL SALARY/INCOME?

- ○ Less than $6,000
- ○ $6,000 to $8,999
- ○ $9,000 to $11,999
- ○ $12,000 to $14,999
- ○ $15,000 to $17,999
- ○ $18,000 to $20,999
- ○ $21,000 to $23,999
- ○ $24,000 to $26,999
- ○ $27,000 to $29,999
- ○ $30,000 to $39,999
- ○ $40,000 to $50,000
- ○ Over $50,000

L HOW WELL DID THIS COLLEGE PREPARE YOU FOR YOUR PRESENT OCCUPATION?

- ○ Very Well
- ○ Adequately
- ○ Poorly
- ○ Not at All

M HOW CLOSELY RELATED IS YOUR CURRENT OCCUPATION TO YOUR MAJOR AT THIS COLLEGE?

- ○ Highly Related
- ○ Moderately Related
- ○ Slightly Related
- ○ Not Related

N DO YOU FEEL YOU ARE CURRENTLY UNDEREMPLOYED?

- ○ Yes
- ○ No

O INDICATE YOUR SATISFACTION WITH THE FOLLOWING ASPECTS OF YOUR PRESENT JOB

VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED	
○	○	○	○	○	Challenge
○	○	○	○	○	Location
○	○	○	○	○	Salary and Benefits
○	○	○	○	○	Advancement Potential
○	○	○	○	○	Working Conditions
○	○	○	○	○	Career Potential

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SECTION V—ADDITIONAL QUESTIONS

If an additional set of multiple-choice questions is included with this form, please use this section to record your responses. Twelve ovals are provided for each question, but few questions require that many choices. Simply ignore the extra ovals. If no additional questions are enclosed, leave this section blank.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ
Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓑ
Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ	Ⓒ
Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ	Ⓓ
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Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ	Ⓕ
Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ	Ⓗ
Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ	Ⓘ
Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ	Ⓙ
Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ	Ⓚ
Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ	Ⓛ

SECTION VI—MAILING ADDRESSES

PLEASE PRINT YOUR NAME AND CURRENT ADDRESS ON THE LINES PROVIDED BELOW.

First Name MI Maiden Name Last Name

Street Address/P.O. Box

City

State Zip Code

PLEASE PRINT THE NAME AND ADDRESS OF SOMEONE WHO CAN FORWARD MAIL TO YOU, SHOULD YOU MOVE.

Name

Street Address/P.O. Box

City

State Zip Code

PLEASE PRINT YOUR CURRENT BUSINESS ADDRESS ON THE LINES PROVIDED BELOW.

Name of Organization

Street Address/P.O. Box

City

State Zip Code

SECTION VII—COMMENTS AND SUGGESTIONS

If you wish to make any comments or suggestions concerning this college, please use the lines provided below.

DO NOT WRITE BELOW THIS LINE.

APPENDIX 2

TASK FORCE ON EXCELLENCE, EFFICIENCY AND COMPETITIVENESS

3030 NORTH CENTRAL, SUITE 1414
PHOENIX, ARIZONA 85012
(602) 255-2018

A.J. Pfister
Chairman
James P. Simmons
Vice Chairman

MEMBERS

Laura Banks
Jose Cardenas
David D. Chase
John Driggs
Katie Dusenbury
William A. Franke
Senator Carl Kunasek
Representative Joe Lane
William E. Nelson
Donald Shropshire
Ralph Watkins

Robert MacVicar
Executive Director

Dear University of Arizona Alumnus,

Please become a partner in helping to improve the undergraduate experience at the University of Arizona!! We ask only for a few minutes of your time.

The Arizona Board of Regents has convened a Task Force to perform an objective evaluation of the Arizona Universities. The final report of the Task Force will include recommendations that will promote excellence and efficiency within the universities and competitiveness with peer institutions outside of Arizona. Seven areas of university activity are being targeted, one of which is the quality of undergraduate education.

We are very interested in your opinions about your undergraduate experience at the University of Arizona and urge you to participate in our evaluation efforts by completing and returning the enclosed survey form. A stamped return envelope is enclosed for your convenience. We would also welcome any response in writing that you might wish to make. You need not supply your social security number (Section 1-A). We want to encourage your candid and fearless reply. Please use a soft lead pencil, and do not fold the completed survey instrument.

Don't miss this opportunity to make your opinions count. The information gained will be invaluable, not only to the Task Force, but to the ongoing planning processes of the University as it seeks to improve the quality of the undergraduate experience. If you would like to receive a document summarizing the results of the survey, please enclose your name and address, and I will have one mailed to you.

Sincerely,

A. J. Pfister
Chairman

AJP:jm
Enclosures

APPENDIX 3

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Dear Alumnus,

A REMINDER!!!! If you have not returned the Alumni Survey form you recently received, please do so at your earliest convenience. If you have returned it we thank you.

Sincerely,

AJ Pfister

A. J. Pfister
Chairman, EEC Task Force

A SURVEY OF UNDERGRADUATE STUDENT OPINIONS

KATHLEEN CHURCH

CONCLUSIONS:

1. Undergraduate students currently attending Arizona's public universities perceived that the quality of instruction is no better or no worse than did a comparative national group of college and university students.
2. Students from all three universities responded considerably less favorably to specific survey items related to administrative procedures, scheduling problems, campus safety and fear of loss of personal items by thievery than did the national comparative student group. However, the significance of these observations may be affected by the the lack of adequate comparative data from institutions considered to be peers of Arizona's universities, especially in size and location.
3. Students from all three universities were surprisingly similar in their responses to the majority of the survey items but NAU students responded more positively to more items, especially those related to involvement with faculty and instructor accessibility. They also responded more negatively to more items than did students from UA and ASU. Examples included items related to library, book store, food services, and housing availability.

INTRODUCTION

The "Student Reaction to College" survey was designed by the Educational Testing Service to give students an opportunity to comment on a variety of experiences at their college or university. The results reflect what a group of students thinks about a specific institution. Such information can give university faculties and administrators a better idea of what students find helpful and positive. It can also identify areas in which students feel changes or improvements are needed. The information, when properly used, can be helpful in planning and evaluating programs.

Students responded to questions which fall into 18 general categories. This report will not attempt to discuss all 18 areas but will focus on a few that are concerned primarily with academic issues and areas where the data suggest that improvements may be warranted. The detailed data resulting from the survey will be made available to appropriate officials and student organizations within the universities and

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Kathleen Church is a geneticist with her PhD from UC, Berkeley. After three years of post-doctoral research, she joined the Department of Zoology at ASU in 1969. Honored for both the quality of research and the quality of her teaching, she has received ten research grants, authored more than 40 research articles, and served as Department Chair at ASU and as visiting professor at York and Duke Universities.

to the Board of Regents.

METHODS AND MATERIALS

The survey was a cooperative project of the Task Force and the Arizona Students Association (ASA). The survey instrument was selected after careful consideration of available instruments by the Task Force staff, the officers of ASA, and the officers of the Associated Students of the three universities (ASUA, ASASU and ASNAU). The instrument "Student Reaction to College" (four-year edition) was created by Educational Testing Service, College and University Programs, Princeton, New Jersey) (appendix A). The testing service supplies a set of comparative data which has been compiled from responses by 12,133 students at 59 colleges and universities between 1979 and 1983 (see appendix B for a list of colleges). Unfortunately, the institutions that comprise the comparative group are not peer institutions with the Arizona universities. Most are small, private liberal-arts colleges. Apparently, large public universities have used this instrument infrequently. While it is unfortunate that we have little data from peer institutions with which to compare the results of our survey, the comparative data base supplied by the testing service is useful. It gives a sense of what young people from all over the United States were thinking and how their opinions compare to those of students who now attend Arizona's public universities. For example, if Arizona students have responded very negatively to a particular item, it is often the case that students from all institutions have responded negatively to the same item. Such information is useful when drawing conclusions about specific institutions.

The survey was carried out during February and March, 1988. Approximately 40 classes at each university were selected from the Spring schedules of classes using a modified random-sampling technique. Letters were sent to the instructors of the classes requesting permission for members of the Arizona Students Association to enter the class and administer the survey instruments (see appendix C). The sampling method met with mixed results. Problems encountered included the refusal of some faculty members to respond to the request and refusal of some faculty members who responded to participate. The most extreme example of problems encountered was at the University of Arizona where due to a combination of factors only 20 classes ultimately were included in the survey. An additional major problem was that in some cases attendance at the class during the day the survey was conducted was poor. As a result, the numbers participating in the survey were not as large as were our initial goals. Despite the problems, the director of the survey extends her thanks to the students at the three universities, especially the Associated Students and faculty at Northern Arizona University. The organized and efficient manner in which the NAU students approached the task was exemplary and the participation of the faculty was enthusiastic. A special thanks is also extended to Ms. Karen Kunasek, president of the Associated Students at ASU.

THE SAMPLES

Arizona State University:

Five hundred and forty-eight students from Arizona State University participated in the survey. Males were underrepresented (Table 1). The ethnic mix of the sample is acceptable as is the representation of lower-division and upper-division students. However, the upper-division students are overrepresented by juniors and underrepresented by seniors.

Table 1
Characterisics of the Students Who Participated in the Survey From Arizona State University

	POPULATION	SAMPLE
MALES	.51	.38*
FEMALES	.49	.57*
AMERICAN INDIANS	.01	.01
BLACK	.02	.01
ASIAN	.02	.04
HISPANIC	.05	.05
WHITE AND OTHER	.90	.89
FRESHMEN	.21	.19
SOPHOMORES	.19	.20
JUNIORS	.24	.33
SENIORS	.32	.22
OTHER	.03	.06

*10% did not respond to question

University of Arizona:

Students participating in the survey from the University of Arizona numbered 447. The females are slightly overrepresented; juniors are significantly overrepresented and freshmen and sophomores underrepresented. The ethnic mix of the sample is excellent (Table 2).

Table 2
Characteristics of the students Who Participated in the Survey from the University of Arizona

	POPULATION	SAMPLE
MALES	.52	.43*
FEMALES	.48	.50
AMERICAN INDIAN	.01	.02
BLACK	.02	.02
ASIAN	.03	.03
HISPANIC	.07	.06
WHITE AND OTHER	.88	.87
FRESHMEN	.26	.15
SOPHOMORES	.22	.18
JUNIORS	.20	.31
SENIORS	.24	.25
OTHER	.06	.07

* 5% did not respond to question.

Northern Arizona University:

A total of 596 students participated in the survey from Northern Arizona University. The sample is represented by the appropriate number of males and females and appears to be representative of the majority-minority profile of the general population of students. However, the sample is overrepresented by juniors and underrepresented by freshmen. This is unfortunate since freshmen represent more than one-third of the undergraduate student body at NAU (Table 3).

Table 3
Characteristics of the Sample of Students Surveyed From Northern Arizona University

	POPULATION	SAMPLE
MALES	.46	.44
FEMALES	.54	.56
AMERICAN INDIAN	.06	.08
BLACK	.01	.02
ASIAN	.01	.02
HISPANIC	.06	.05
WHITE AND OTHER	.86	.83
FRESHMEN	.36	.16
SOPHOMORES	.21	.20
JUNIORS	.18	.30
SENIORS	.23	.24
OTHER	.02	.09

RESULTS

Quality of Instruction

Eighteen of the 102 report items related specifically to the quality of instruction. The average percent favorable response for the 18 items are illustrated in Figure 1.

The pooled information from the 18 questions suggests that on average the students at the Arizona institutions respond almost identically to each other and to the comparative group about the

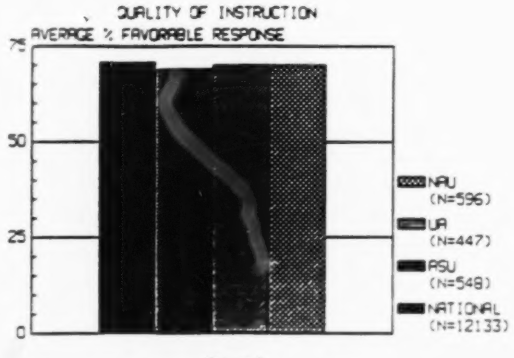

Figure 1.

overall quality of instruction. Responses to the individual items listed in Table 4 are summarized in Figure 2.

Table 4
Survey Items Relating to Quality of Instruction*

Item no.	Item	Favorable Responses
	During this term, my instructors have:	
4	geared courses to student's interest and abilities.	Often or almost always
5	been unable to explain something to me.	Sometimes or almost never
6	respected student view different from theirs.	Often or almost always
7	presented more in class than readings.	Often or almost always
8	really listened to class discussion.	Often or almost always
9	done little except put out the material.	Sometimes or almost never
11	treated all their students fairly.	Often or almost always
12	been clear about what they expected.	Often or almost always
13	piled on work as if it's my only class.	Sometimes or almost never
17	taught over the heads of their students.	Sometimes or almost never
	During this term, I have:	
44	had assignments that were busywork.	Sometimes or almost never
45.	been bored in class.	Sometimes or almost never
46	had a class with material I knew.	Sometimes or almost never
48	felt frustrated with slow moving class.	Sometimes or almost never
120	had a course where instructor consistently came to class unprepared.	No
124	had a course I thought would be dull turn out to be interesting.	Yes
125	had a course I thought would be interesting turn out to be dull.	No
126	had a course taught too much like high school.	No

*See Appendix D for a description of the 18 areas, one of which is Quality of Instruction.

Review of the responses to the individual items (Figure 2) emphasizes that the students at all three universities are almost identical to each other in their perceptions about the quality of instruction. They responded, in most cases, as favorably as the students in the comparative group. The latter observation might be considered surprising since, as previously mentioned, the comparative data represent opinions, for the most part, about small liberal-arts colleges where teaching is the primary, and in many cases the only, focus. It suggests that there is no reason for major concern about the quality of instruction occurring in Arizona's public universities as perceived by the current students. However, caution is warranted in interpreting the results because at two of the three universities, lower division students are underrepresented in the sample.

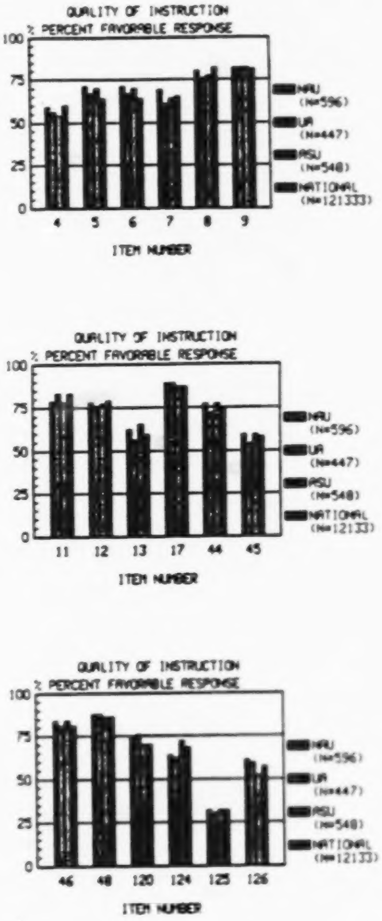

Figure 2.

Instructor Accessibility and Involvement with Faculty –

Northern Arizona students, in general, responded more favorably to questions concerning instructor accessibility and involvement with the faculty than did students at the two larger universities (Figure 3).

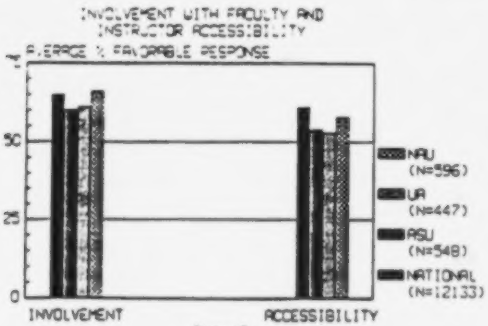

Figure 3.

The result may be partially explained by the deficiency in the number of freshmen who participated in the survey from NAU and the fact that lower-division classes are often larger than upper-division classes. However, our results from a survey of alumni (see working paper on alumni survey) also suggests that students at NAU perceive that the opportunity for faculty involvement and accessibility is greater at NAU than at UA or ASU.

Of the eight individual items relating to this topic, NAU students responded most favorably on five, although the differences among the universities and between the universities and the comparative group were surprisingly small. Table 5 lists the individual items and Figure 4 illustrates the responses to the items which are concerned with instructor accessibility and involvement with faculty.

Table 5
Items Concerning Instructor Accessibility and Involvement with Faculty

Item No.	Item	Favorable Responses
	During this term my instructors have:	
1	been available outside of class at good times for me.	often, almost always
2	been easy to talk to.	often, almost always
3	had trouble understanding student problems.	sometimes, almost never
	During this term I have:	
19	talked to a prof outside class regarding a course.	yes once, yes twice
21	got course help from prof outside class.	yes once, yes twice
29	talked to a prof about nonclass things.	yes once, yes twice
36	felt faculty/staff did not understand what I was saying.	no
53	felt lack of sensitivity of fac/staff.	sometimes, almost never

Item 29 perhaps best differentiates the students at NAU from the students at UA or ASU. Apparently, NAU students talk to their professors about things not connected with class more often than do the students at UA or ASU (Figure 4).

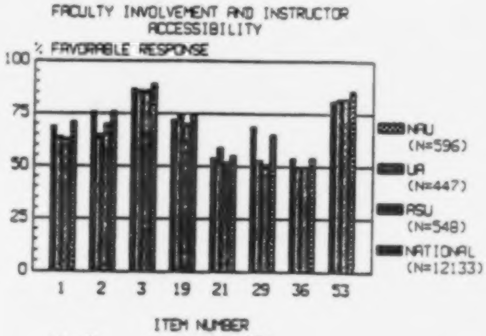

Figure 4.

Administrative Procedures and Campus Life

While the students at Arizona's universities responded quite favorably to the quality of instruction and to their interaction and involvement with the faculty, they were considerably less favorable than the comparative group in their overall opinions about four categories which included;

1) Programming,

2) campus climate,

3) administrative procedures, and

4) registration and scheduling.

Inspection of the individual items that make up these categories reveals that the negative responses were primarily clustered in the ten items listed in Table 6.

Table 6
Some Survey Items Relating to Administrative Procedures, Programming, Campus Climate and Registration and Scheduling

Item No.	Item	Favorable Response
	During the present term I have:	
24	had to go through a long, admin. process that seemed senseless.	No
25	had to go from one office or person to another to get information.	No
28	been inconvenienced by an admin. error.	No
33	been given wrong or incomplete info. about programs by a staff member.	No
42	been angered by something the administration did.	No
114	been kept out of a course I wanted because I didn't meet requirements	No
117	been prevented by scheduling problems from taking a course required in my field.	No
118	missed a course I needed because it wasn't available.	No
	In General:	
107	I feel I can't lay down a book on campus for fear it will be stolen.	Def. not or No
112	I feel unsafe on campus after dark.	Almost never

Most of the items on the list refer to the everyday battles that must be fought with a university bureaucracy and the responses to the items (Figure 5) suggest a certain level of frustration by the students from Arizona's universities when compared to the group that comprises the comparative data base.

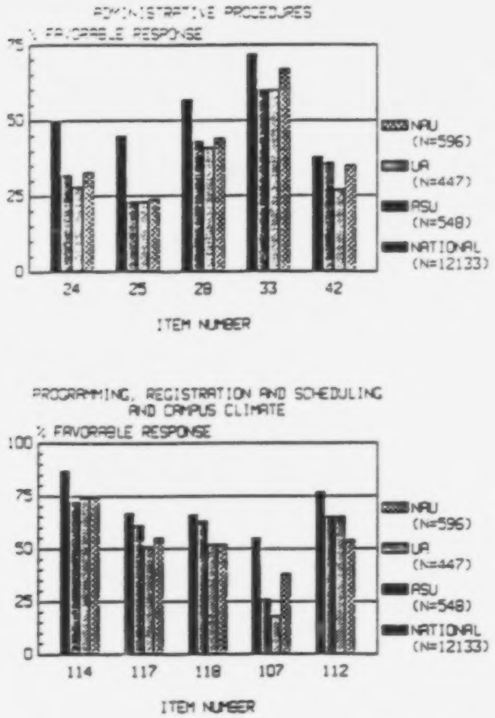

Figure 5.

BOUQUETS AND BRICKBATS

For the most part, students from Arizona's universities did not respond much differently from the comparative group in any major category other than those previously mentioned (Table 7).

Table 7
A Comparison of Responses to Some Major Categories of the Student Opinion Survey

CATEGORY*	Average Percent Favorable Response			
	National	ASU	UA	NAU
Form of Instruction (3 Items)	68	68	68	64
Academic Performance (8 Items)	66	63	63	63
Grading (3 Items)	60	55	53	60
Studying (11 Items)	57	51	55	52
Counseling and Advising (8 Items)	62	60	59	61
Planning (11 Items)	64	60	59	62
Library and Bookstore (3 Items)	60	71	70	52
Rules and Regulations (4 Items)	33	26	25	24
Organized Student Activities (4 Items)	29	26	26	26
Help With Living Problems (3 Items)	39	32	29	34
Financial and Related (8 Items)	59	58	59	54

* See Appendix D for description of categories

Despite the overall similarities in the major categories, there were some individual items where the students responded either significantly more or significantly less favorably than the national group. The students were very favorable about extracurricular activities on the campuses, the libraries at UA and ASU, and the bookstores at all three universities. Students at ASU and the UA responded very favorably about food services when compared to the national group. Finally, significantly more students from Arizona's universities talk with a counselor about future plans (Table 8).

Table 8
Survey Items Where Students From Arizona's Universities Responded Substantially More Favorably Than the Comparative Group

Item No.	Item	Favorable Response
	In General:	
88	the campus is a place where students just go to class; not much else happens here.	No or Def. not
104*	I've been well satisfied with the services of the library.	Yes or Def. yes
105	I've been well satisfied with the services of the bookstore.	Yes or Def. yes
89*	food services on campus are adequate for my needs.	Yes or Def. yes
	During this term I have:	
26	talked with a counselor about my future plans.	Yes, once or twice

*ASU and UA more favorable, NAU less favorable

On the other hand, students who responded to the survey were significantly more negative on several individual items than was the national group. Students from Arizona's universities lose more credits because of transfer problems, are more likely to have had to learn math in college that they should have learned in high school, feel unsafe on campus after dark and fear that personal items will be stolen if left unattended (Table 9).

Table 9
Survey Items on Which Students From Arizona's Universities Responded Less Favorably Than the National Group

Item No.	Item	Favorable Response
	In General:	
75	I've lost time toward my degree because of transferring from one college to another.	No or Definitely not
84	rules and regulations that affect me are made by the administration without enough consultation with students.	No or Definitely not
92	I have had to spend time learning math I should have known.	No or Definitely not
107	I feel I can't lay down a book or anything else on campus for fear it will be stolen.	No or Definitely not
112	I feel unsafe on campus after dark.	No or Definitely not

There were similar student responses from the three universities to the majority of the survey items, but there were some areas where students had rather strikingly different reactions. NAU students were either clearly more positive or more negative on more items than were the students from ASU and UA. Of the 102 report items, the responses from the three universities differed by five percent or less on 73.

NAU students were more positive than the other institutions by six or more percent on nine items and less positive by six or more percent on nine items. Comparable figures for ASU are four and two and for UA two and three, respectively (see Tables 10-13 and Figures 6-9).

Table 10
Survey Items About Which NAU Students Were Comparatively Positive

Item No	Item	Positive Responses
	During the present term my instructors have:	
1	been available outside of class at times convenient.	Often and almost always
15	returned exams and papers soon enough to be helpful.	Often and almost always
	During the present term I have:	
29	Talked with an instructor about things not connected with class.	Yes, once, twice or more
33	been given wrong or incomplete information by staff	No
38	tried unsuccessfully to meet with a counselor	No
	In General:	
91	where I live I feel cut off from campus	Definitely not or no
93	the college does as much as possible to hire students	Definitely yes or yes
98	I got the courses I wanted	Definitely yes or yes
107	I feel I can't lay down a book for fear it will be stolen.	Definitely not or no

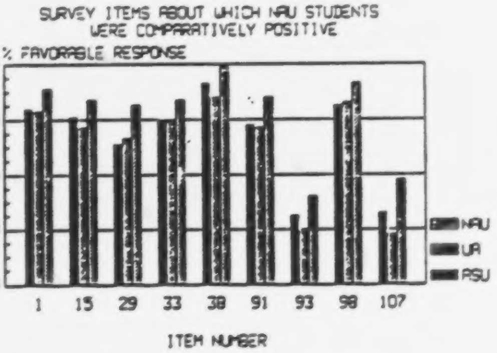

Figure 6.

Table 11
Survey Items About Which NAU Students Were Comparatively Negative

Item No.	Item	Positive Responses
	During the present term I have:	
23	been unable to use the library when I needed to because it wasn't open.	No
39	looked seriously for part-time work unsuccessfully	No
	In General:	
80	student publications are too tightly controlled by administration.	Definitely not or no
89	food services on the campus adequate for my needs.	Definitely yes or yes
90	I have problems getting acceptable housing.	Definitely not or no
104	I've been satisfied with services of the library.	Yes or Definitely yes
105	I've been satisfied with the book store.	Yes or Definitely yes
112	I feel unsafe on campus after dark.	Almost never, sometimes

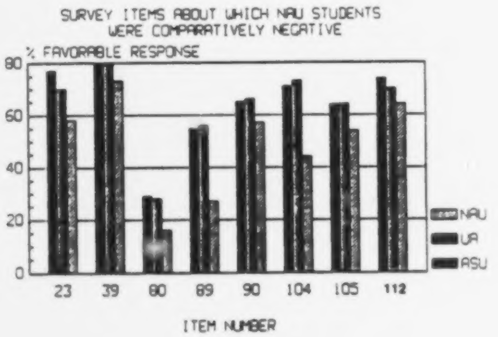

Figure 7.

Table 12
Survey Items About Which ASU Students Were Comparatively Positive or Negative

Item No.	Item	Favorable Responses
POSITIVE		
	During the present term:	
35	I have faced a problem that the university should have helped with but didn't.	No
117	been trapped by rigid drop and add requirements in a course I didn't need or want.	No
118	missed a course I needed because it wasn't available.	No
120	had a course where the instructor came to class unprepared.	No
NEGATIVE		
	During the present term my instructors have:	
16	given detailed comments about papers, exams or other material I've turned in.	Often, Almost always
	During the present term I have:	
34	gone to a meeting of a college organization or to an organized social activity at the college.	Yes, once or twice

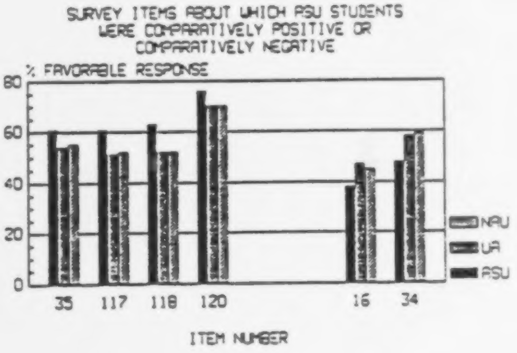

Figure 8.

Table 13
Survey Items About Which UA Students Were Comparatively Positive or Negative

Item No.	Item	Favorable Responses
POSITIVE		
	During the present term I have:	
52	found I couldn't understand what I was studying	Sometimes, Almost never
	In General:	
88	the campus is a place where students just go to class, not much else happens here.	Definitely not or no
NEGATIVE		
	During the present term I have:	
37	got help from a faculty or staff with a problem I was having in college.	Yes
42	been angered by something the college administration did.	No
43	known how well I was doing before I got a grade.	Yes

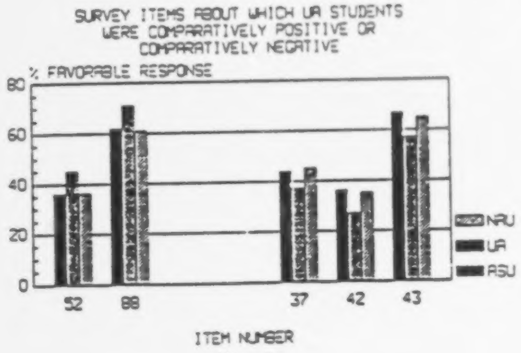

Figure 9.

OBSERVATIONS AND DISCUSSION

To make firm national comparisons about how our universities are perceived by their students and to make value judgments about those comparisons would require that we possess data from peer institutions for Arizona's institutions.

For ASU, peers would be large, public research universities in an urban setting with large commuter and transfer populations and many part-time students; for UA, large, public research universities with large residential and commuter populations and reasonably large numbers of transfer students; for NAU, medium-sized comprehensive, residential universities with a relatively large transfer population.

Nonetheless, it is somewhat remarkable that the responses from the three groups of students were so similar to each other and to the group that forms the comparative data. In almost all cases where students from Arizona's universities responded significantly less favorably than students in the comparative group, it was the bureaucracy that inconvenienced students. It may be that there is a size at which a university loses much of its personal touch and helpful nature. If that is the case, then the size must be below 15,000 because students from NAU responded no differently to questions concerning administrative procedures, programming and campus climate than students from ASU or UA.

It appears that the most robust conclusion that can be drawn from the analysis is that there are no obvious major problems with the perceptions that undergraduate students have about Arizona's universities when compared to a large group of students from other colleges. The data for the Arizona institutions will provide a valuable benchmark from which to assess changing perceptions of undergraduate students and it should be used by the universities to identify areas of the undergraduate experience that are in need of immediate attention.

Interestingly, the current students from the three universities responded more similarly to items concerning the quality of undergraduate education than did alumni (class of 1981) of the three institutions. It may be that changes in quality have occurred during the intervening seven years whereby the institutions have become more similar. Alternatively, alumni, upon reflection, may be somewhat more discriminatory. Both hypotheses are intriguing and could be tested should the universities be interested in such information.

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APPENDIX A

SRC STUDENT REACTIONS TO COLLEGE

FOUR - YEAR COLLEGE EDITION

Name of College: ______________________________

ETS College and University Programs
Princeton, New Jersey 08540

759a

STUDENT REACTIONS TO COLLEGE

This questionnaire gives college students a means of stating their views about their college experiences. It lets you express yourself about things you consider valuable and about other things that are less valuable or irritating. The results can help faculty members, administrators, and students know better what is going well at your institution and what needs changing.

The important results are in what groups of students say, so identification of individual students is not necessary. Please do not put your name on the booklet.

Statements in the booklet describe experiences or situations that have been important to many college students. Please state your views about each of them by blackening the one oval that comes closest to indicating your own experience or point of view.

Use a soft lead pencil (preferably No. 2) for all responses to the questionnaire. Do not use an ink or ballpoint pen.

Follow the directions for each section, and try to answer all questions, keeping in mind your experiences at this college this term.

Your college is interested in what you think.

During the present term my instructors have . . .	Almost never 1	Sometimes 2	Often 3	Almost always 4
1. been available outside class at times convenient to me.	○	○	○	○
2. been easy to talk to.	○	○	○	○
3. had trouble understanding the students' problems.	○	○	○	○
4. geared their instruction to the students' interests and abilities.	○	○	○	○
5. been unable to explain something in a way I could understand it.	○	○	○	○
6. respected student points of view different from their own.	○	○	○	○
7. presented more in class than I learned from assigned readings.	○	○	○	○
8. really listened to student questions and discussions in class.	○	○	○	○
9. done little more than put out the material, leaving me to get it as best I can.	○	○	○	○
10. expected more outside work than I have time for.	○	○	○	○
11. treated all their students fairly.	○	○	○	○
12. been clear about what they expected of students.	○	○	○	○
13. piled on the work as though theirs is the only course I have.	○	○	○	○
14. allowed students a reasonable amount of freedom in the way course assignments are carried out.	○	○	○	○
15. returned exams and papers with grades, corrections, or comments soon enough to be helpful.	○	○	○	○
16. given detailed comments about papers, exams, or other material I've turned in.	○	○	○	○
17. taught over the heads of their students.	○	○	○	○

Go on to next page.

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During the present term I have . . .	No 1	Yes once 2	Yes, twice or more 3
18. participated in a course-related activity off the campus.	○	○	○
19. talked about course work for at least 15 minutes with an instructor outside of class time.	○	○	○
20. done badly on a test.	○	○	○
21. got help on coursework from a faculty member outside class.	○	○	○
22. had to buy a textbook that was not really necessary.	○	○	○
23. been unable to use the library when I needed to because it wasn't open.	○	○	○
24. had to go through a long, administrative process that seemed senseless to me.	○	○	○
25. had to go around and around from one office or person to another trying to get information.	○	○	○
26. talked with a counselor about my future plans.	○	○	○
27. taken time I should have spent on one course to catch up in another.	○	○	○
28. been inconvenienced by an administrative error.	○	○	○
29. talked with an instructor about things not connected with class.	○	○	○
30. looked through occupational information to learn about job possibilities for when I finish college.	○	○	○
31. taken tests to decide what kind of courses to take.	○	○	○
32. tried unsuccessfully to meet with my faculty adviser.	○	○	○
33. been given wrong or incomplete information about programs or courses by a college staff member.	○	○	○
34. gone to a meeting of a college organization or to an organized social activity at the college.	○	○	○
35. faced a problem involving housing, a job, sources of financial aid, transportation, or something else connected with going to college that the college should have helped me with but didn't.	○	○	○
36. felt that a faculty or staff member didn't understand what I was saying.	○	○	○
37. got help from a faculty or staff member with a problem I was having in college.	○	○	○
38. tried unsuccessfully to meet with a counselor.	○	○	○
39. looked seriously without success for part-time or temporary work.	○	○	○

Go on to next page.

During the present term I have . . .	No 1	Yes, once 2	Yes, twice or more 3
40. thought seriously about dropping out because of money problems.	○	○	○
41. been kept from something I wanted to do because of what seemed to be an unnecessary regulation.	○	○	○
42. been angered by something the college administration did.	○	○	○

During the present term I have . . .	Almost never 1	Sometimes 2	Often 3	Almost always 4
43. known how well I was doing in my courses before I got a grade.	○	○	○	○
44. had assignments from my instructors that were really only busy-work.	○	○	○	○
45. been bored in class.	○	○	○	○
46. been in a class that just went over material I already knew.	○	○	○	○
47. felt left behind in a class.	○	○	○	○
48. felt frustrated because the class wasn't moving fast enough.	○	○	○	○
49. had trouble concentrating on what I was supposed to be studying.	○	○	○	○
50. had so much reading to do that I didn't have time to really understand it.	○	○	○	○
51. been able to get help with studies when I've needed it.	○	○	○	○
52. found I couldn't understand what I was studying even though I thought I understood it earlier in class.	○	○	○	○
53. felt bitter or angry about the lack of sensitivity of a member of the college faculty or staff.	○	○	○	○
54. had problems getting to and from the campus.	○	○	○	○
55. had to study so much that I haven't had time to relax and enjoy college.	○	○	○	○

Go on to next page.

How do you feel about each of the following	I strongly oppose 1	Oppose 2	Indifferent or uncertain 3	Favor 4	I strongly favor 5
56. Course assignments where several students work together.	○	○	○	○	○
57. At least one course based on independent study.	○	○	○	○	○
58. The best students and the slower students taught in separate classes.	○	○	○	○	○
59. Grades based on day-to-day work instead of totally on a few big exams or papers.	○	○	○	○	○
60. End-of-course grades that tell me how well I did compared with other students.	○	○	○	○	○
61. Small classes meeting once a week instead of large classes meeting more often.	○	○	○	○	○
62. Classes that stay on the course schedule even if some students get left behind or lose interest.	○	○	○	○	○
63. At least one course in which I am not graded.	○	○	○	○	○
64. Course credit based on passing an exam without having to take the course.	○	○	○	○	○
65. Practical experience in actual job situations even if it takes me longer to finish college.	○	○	○	○	○
66. Class experiences out in the community or away from the college.	○	○	○	○	○
67. An office, supported by student fees, for advice on housing, living expenses, drugs, birth control, abortion, and other nonacademic concerns of students.	○	○	○	○	○
68. Cultural events on campus—art exhibits, theater, concerts, etc.	○	○	○	○	○
69. No grades at all; just written comments by my instructors.	○	○	○	○	○
70. Classes without texts or assignments, organized around informal discussions.	○	○	○	○	○
71. Activities designed for married students or older students.	○	○	○	○	○

Go on to next page.

What is your view of each of the following statements? **In general . . .**	Definitely not 1	No 2	Indifferent or uncertain 3	Yes 4	Definitely yes 5
72. my courses are pretty closely tied to my future job plans.	○	○	○	○	○
73. I'm doing well in my major field.	○	○	○	○	○
74. I know what I want to do when I finish here.	○	○	○	○	○
75. I've lost time toward my degree because of transferring from one college to another.	○	○	○	○	○
76. my occupational plans have changed since I started here.	○	○	○	○	○
77. I know as much as I need to know about graduate school or other training needed for my chosen career.	○	○	○	○	○
78. the college gives me pretty much what I want.	○	○	○	○	○
79. I've never learned to study well enough to handle the work in the time I have.	○	○	○	○	○
80. student publications are too tightly controlled by the administration.	○	○	○	○	○
81. the rules and regulations are pretty relaxed here; nobody feels hassled.	○	○	○	○	○
82. organized social activities at the college are not necessary because enough is going on in the surrounding area.	○	○	○	○	○
83. I would prefer a field of study with more definite job possibilities than my present field.	○	○	○	○	○
84. rules and regulations that affect me are made by the administration without enough consultation with students.	○	○	○	○	○
85. students here have a reasonable role in deciding what services are paid for from student fees.	○	○	○	○	○
86. a handful of students run things here.	○	○	○	○	○
87. students here don't care about much except getting through with college.	○	○	○	○	○
88. the campus is a place where students just go to class; not much else happens here.	○	○	○	○	○
89. food services on the campus are adequate for my needs.	○	○	○	○	○
90. I have had problems getting acceptable housing.	○	○	○	○	○
91. where I live I feel cut off from the campus.	○	○	○	○	○

Go on to next page.

What is your view of each of the following statements? In general . . .	Definitely not 1	No 2	Indifferent or uncertain 3	Yes 4	Definitely yes 5
92. I have had to spend time learning math that I should have known.	○	○	○	○	○
93. the college does as much as it can to hire students or their spouses in its clerical and maintenance jobs.	○	○	○	○	○
94. I'm uncertain about what I'm getting from college.	○	○	○	○	○
95. I would change my field of study if I wouldn't be delayed finishing college.	○	○	○	○	○
96. the college has been a friendly, comfortable place to be.	○	○	○	○	○
97. registration procedures were a real burden.	○	○	○	○	○
98. I got the courses I wanted.	○	○	○	○	○
99. the struggle of getting started lasted too long into the term.	○	○	○	○	○
100. required courses in my major field keep me from taking other courses I like.	○	○	○	○	○
101. I'm here for the classes; I don't need the non-curricular activities.	○	○	○	○	○
102. costs of books and supplies have been a problem.	○	○	○	○	○
103. I've begun to think the program of courses I'm taking is not really what I want.	○	○	○	○	○
104. I've been well satisfied with the services of the college library.	○	○	○	○	○
105. I've been well satisfied with the services of the college book store.	○	○	○	○	○
106. it's very hard for students here to get their concerns known and acted on.	○	○	○	○	○
107. I feel I can't lay down a book or anything else on campus for fear it will be stolen.	○	○	○	○	○

Go on to next page.

What is your view of each of the following statements? In general . . .	Almost never 1	Sometimes 2	Often 3	Almost always 4
108. I've had trouble deciding what courses to take.	○	○	○	○
109. Students here are given the respect and responsibility of adults.	○	○	○	○
110. Information about what's going on at school has been easy to get.	○	○	○	○
111. The student government effectively represents my point of view.	○	○	○	○
112. I feel unsafe on the campus after dark.	○	○	○	○

This term I have . . .	No 1	Yes, one course 2	Yes, two or more courses 3
113. dropped a course because it wasn't what I wanted.	○	○	○
114. been kept out of a course I wanted because I didn't meet the requirements.	○	○	○
115. had to take a course below the level of one I wanted and could have handled.	○	○	○
116. been trapped by rigid drop and add requirements in a course I found I didn't need or want.	○	○	○
117. been prevented by scheduling problems from taking a course required in my field.	○	○	○
118. missed a course I needed because it wasn't available.	○	○	○
119. taken a required course that's been a waste of time.	○	○	○
120. had a course where the instructor consistently came to class unprepared.	○	○	○
121. got so far behind in a course, without realizing it, that I never really caught up.	○	○	○
122. been in a course slanted too heavily toward students going into a job in that field.	○	○	○
123. taken a course geared too much to students planning to go on to graduate school.	○	○	○
124. had a course I thought would be dull turn out to be interesting.	○	○	○
125. had a course I thought would be interesting turn out to be dull.	○	○	○
126. had a course that was taught too much like high school courses.	○	○	○

Go on to next page.

How do you feel about the following statements?	Definitely not 1	No 2	Indifferent or undecided 3	Yes 4	Definitely yes 5
127. I need someplace on campus where I can study with other students.	○	○	○	○	○
128. I need someplace on campus where I can study without being disturbed.	○	○	○	○	○
129. I need more information about what the job situation will be like when I leave here.	○	○	○	○	○
130. I need a child care center on or near the campus.	○	○	○	○	○
131. I need a locker on campus, which I don't have now.	○	○	○	○	○
132. I need help finding a temporary or part time job.	○	○	○	○	○

The college should . . .	Definitely not 1	No 2	Indifferent or undecided 3	Yes 4	Definitely yes 5
133. limit more library books to one-day circulation so they would be available to more students.	○	○	○	○	○
134. stock more copies of texts and other required books in the library for rental by the day or week.	○	○	○	○	○
135. cut down the time students spend filling out forms by computerizing the routine administrative work.	○	○	○	○	○
136. cut out compulsory student fees, such as those for student activities, intercollegiate athletics, the student newspaper, etc.	○	○	○	○	○
137. use more part-time employees so students could be hired.	○	○	○	○	○
138. offer more courses and programs for people in the community who are not regular students.	○	○	○	○	○
139. have student records and transcripts show only a list of the courses the student has passed, without grades.	○	○	○	○	○
140. record grades only in a student's major field, and just list the other courses a student has passed.	○	○	○	○	○
141. let students enroll in classes they feel they can handle, regardless of test scores or prerequisites.	○	○	○	○	○
142. add several days at the beginning of the term to allow students more time to work out their programs.	○	○	○	○	○

Go on to next page.

The college should . . .	Definitely not 1	No 2	Indifferent or undecided 3	Yes 4	Definitely yes 5
143. let as many students as want to take any class with any instructor even if some classes become huge.	○	○	○	○	○
144. enforce campus regulations more firmly.	○	○	○	○	○
145. let student groups organize and meet on campus without having to get permission from the administration.	○	○	○	○	○
146. deny permission to speak on campus to nonstudents with extreme political or social views.	○	○	○	○	○
147. let students drop a course at any time without being given a failing grade.	○	○	○	○	○
148. take disciplinary action against students for illegal off-campus actions.	○	○	○	○	○
149. leave the control of students' out-of-class activities entirely to the students.	○	○	○	○	○
150. retain the present academic calendar.	○	○	○	○	○

LOCAL OPTION SECTION

Please answer (in the spaces below) any extra questions that may have been provided by your college, and then turn to the next page and complete the information questions there. If no extra questions are provided by your college go directly to page 11 and complete the information questions.

151.	○	○	○	○	○	161.	○	○	○	○	○
152.	○	○	○	○	○	162.	○	○	○	○	○
153.	○	○	○	○	○	163.	○	○	○	○	○
154.	○	○	○	○	○	164.	○	○	○	○	○
155.	○	○	○	○	○	165.	○	○	○	○	○
156.	○	○	○	○	○	166.	○	○	○	○	○
157.	○	○	○	○	○	167.	○	○	○	○	○
158.	○	○	○	○	○	168.	○	○	○	○	○
159.	○	○	○	○	○	169.	○	○	○	○	○
160.	○	○	○	○	○	170.	○	○	○	○	○

Go on to next page.

Please mark *one* answer for each of the information questions below. This information *will not* be used to identify students, but will be used only to provide general information.

171. Subgroups—*one response only*
Instructions will be given by your college for marking this subgroup item. If instructions are not given, leave this question blank, but answer the other information questions on this page.

○ one
○ two
○ three
○ four
○ five

172. Sex:

○ Male
○ Female

173. Age:

○ 24 or under
○ 25 or over

174. Employment:

○ Not Employed
○ Employed part-time
○ Employed full-time

175. Ethnic group:

○ American Indian
○ Asian-American, Oriental
○ Black, Afro-American, Negro
○ Mexican-American, Chicano, Spanish American
○ White, Caucasian
○ Other ____________________

176. When do you usually have your classes?

○ During the day
○ Late afternoons or evenings

177. For how many credits are you currently enrolled?

○ Fewer than 9
○ 9–11
○ 12–15
○ More than 15

178. What is your class in college?

○ Freshman
○ Sophomore
○ Junior
○ Senior
○ Graduate or other

179. What is your major field or course of study? Please mark the *one* field that seems closest to yours. (Some examples are given in parentheses)

○ *Undecided*
○ *Business* (accounting, marketing, secretarial)
○ *Communication* (broadcasting, journalism, public relations, advertising, film making)
○ *Technology* (data processing, engineering technology)
○ *Applied arts* (photography, interior design)
○ *Fine arts* (painting, theater, music, dance)
○ *Liberal arts and humanities* (languages, literature, ethnic studies, philosophy)
○ *Behavioral sciences* (psychology, sociology, anthropology)
○ *Social sciences* (economics, history, political science)
○ *Public services* (police science, public administration, social welfare)
○ *Education* (elementary, secondary, special education)
○ *Health services* (nursing, physical therapy, occupational therapy, speech therapy)
○ *Biological sciences* (biology, botany, physiology)
○ *Agriculture and natural resources* (ecology, forestry, wildlife management)
○ *Physical sciences and mathematics* (physics, chemistry, geology, statistics)
○ *Engineering and architecture*
○ *Home economics* (clothing and textiles, dietetics, home management, child care)
○ Other ____________________

Thank you.

Comments and complaints regarding any aspects of the questionnaire are welcomed; please send them to:

Student Reactions to College
Educational Testing Service
Princeton, NJ 08541

APPENDIX B

APPENDIX B

Student Reactions to College
Comparative Data for Four-Year College Edition

The comparative data in this report have been compiled from SRC administrations to 12,133 students at 59 colleges and universities between July 1979 and December 1983.

The colleges and universities included are:

Adelphi University
New York

Alabama A&M University
Alabama

Albany College of Pharmacy
New York

Alvernia College
Pennsylvania

Angelo State University
Texas

Bennett College
North Carolina

Bloomfield College
New Jersey

Bowie State College
Maryland

Bradford College
Massachusetts

Cameron University
Oklahoma

College of Saint Elizabeth
New Jersey

College of Saint Rose
New York

Concordia College
Minnesota

Cosumnes River College
California

Dallas Theological Seminary
Texas

Dordt College
Iowa

Eastern Michigan University
College
Michigan

Elizabeth City State

North Carolina

Fairleigh Dickinson University
New Jersey

Kennesaw College
Georgia

Lafayette College
Pennsylvania

Lamar University
Texas

Lincoln Memorial University
Tennessee

Lincoln University
Pennsylvania

Longwood College
Michigan

Madonna College
Michigan

Mercyhurst College
Pennsylvania

Mount Royal College
Canada

Mount Vernon College
District of Columbia

Nasson College
Univ.
Maine

Oberlin College
Univ.
Ohio

Pacific Union College
California

Post College
Connecticut

Randolph Macon Women's Coll.
Virginia

Saint Joseph's College
Maine

Seton Hall University
New Jersey

Southwest State University
Minnesota

State Univ. of NY, Old Westbury
New York

Suffolk University
Massachusetts

United Wesleyan College
Pennsylvania

Univ. of Pittsburgh, Johnstown
Pennsylvania

Wesley College
Delaware

Winthrop College
South Carolina

Xavier University
Ohio

Mundelein College
Illinois

New Mexico Highlands
New Mexico

Our Lady of the Lake
Texas

Peabody Inst., Johns Hopkins
Maryland

Ramapo Coll. of New Jersey
New Jersey

Rosemont College
Pennsylvania

Saint Joseph's College
New York

Seton Hall College
Pennsylvania

State Univ. of NY, Cortland
New York

State Univ. of NY, Potsdam
New York

Tennessee State University
Tennessee

University of Alabama
Alabama

Wilberforce University
Ohio

Wilson College
Pennsylvania

Wisconsin Lutheran College
Wisconsin

This is a "self-selected sample"; that is, it includes four-year institutions that used SRC in 1979-83. It does not proportionally represent American four-year colleges and universities or their geographic distribution. For this reason, the data should be considered *comparative* rather than *normative*. They *do not*, for example, represent a norm against which an institution should compare itself. However, the data do provide an idea of what students at several colleges and universities around the country have considered to be needs and concerns as defined by the questions in Student Reactions to College and, thus, can be a useful aid to a similar institution in interpreting its own SRC results.

The Arizona Board of Regents has convened a Task Force to perform an objective evaluation of the Arizona universities. The final report of the Task Force will include recommendations that will promote excellence and efficiency within the universities and competitiveness with peer institutions outside of Arizona. Seven areas of University activity are being targeted, one of which is quality undergraduate education. To aid the Task Force in carrying out its charge, the Task Force Staff, in cooperation with the Arizona Students Association, will conduct a survey of student opinion about the undergraduate experience.

Your spring semester class was selected to participate in the survey by applying a systematic random sampling technique to the class schedule. Your cooperation is sought in allowing a member of the Associated Students to survey your class. The activity will require about 45 minutes of class time and will take place some time in February. Its purpose is to gather information about their educational experience in general, not your class in particular. A copy of the survey instrument is enclosed for your examination.

I would appreciate it if you would respond by returning the enclosed form indicating whether or not you are willing to participate in this endeavor. If you have questions, you may contact Dr. Kathleen Church at the Task Force office (255-2018). If you respond affirmatively, you will be contacted in the near future to arrange a date for the survey.

I urge you to participate in this activity. The information gained will be invaluable, not only to the Task Force, but to the ongoing planning processes of the University as it seeks to improve the quality of the undergraduate experience.

Sincerely,

A. J. Pfister
Chairman

AJP:jm
Enclosures

Please Return by December 10 in Campus Mail To:
Mr. Rob Chapman
ASA-Task Force Survey
ASUA-Bldg. 19

Course Selected:

Acct 472, Lect 1
Fundamentals of Accounting
3:30 - 4:45 TTH
Harv 108

Yes, I agree to allow 45 minutes of a spring semester class period to be used for the administration of the survey instrument (the date will be arranged with you). ☐

No, I decline to participate. ☐

Name: ______________________

Department: ________________

Phone: _____________________

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APPENDIX D

APPENDIX D

Descriptions of the Eighteen Areas in Student Reactions to College

Quality of instruction--student perceptions of instructors' effectiveness in explaining material in understandable and interesting ways, in providing information not available in the text, in introducing challenging information in the classroom, and in evaluating students fairly.

Form of instruction--student reactions to type of instruction; for example, traditional vs. nontraditional forms of instruction (classroom subject-matter instruction vs. credit by examination, off-campus activities, work/study programs).

Academic performance--student concerns about how well they have done in exams and papers, how frequently they have felt left behind, how well they have understood the course material, how much trouble they have had studying, and similar experiences of academic accomplishment or difficulty.

Grading--student observations on the institution's grading practices (traditional grades vs. nontraditional grading practices such as no grades--comments only).

Studying--perception of the relation between students' study habits and their success or failure in courses.

Instructor accessibility--perceptions of the availability of instructors to respond to concerns of students.

Involvement with faculty--the degree of student satisfaction or dissatisfaction with interaction with faculty members on course matters or extracurricular activities.

Counseling and advising--perceptions of career planning and accessibility of faculty advisers and counselors.

Planning--student awareness of career information and the institution's ability to provide it.

Programming--student needs for assistance in planning programs of study within the institution's course requirements.

Registration and scheduling--degree of student satisfaction or dissatisfaction with the institution's registration scheduling processes, and the regulations covering them, and the academic calendar.

Library/bookstore--student comments on scheduling of services of the library and bookstore and the availability of textbooks when needed.
Rules and regulations--degree of student involvement in rules and regulations governing student activities and services.

Administrative procedures--student attitudes towards the institution's administrative processes, procedures, and regulations.

Campus climate--the extent of student involvement in campus activities and the level of campus comfort and safety; the overall environment of the campus.

Organized student activities--student observations on extracurricular activities--social and cultural--and who should plan and pay for them.

Help with living problems--student perceptions of availability of help for problems of housing, jobs, financial aid, or any phase of college attendance.

Financial and related problems--concerns related to money, food, transportation, part-time employment, and other financial problems.

ATTRACTION AND RETENTION OF CLASSIFIED STAFF: THE SILENT PARTNERS

ESTHER SHERBERG AND KRISTIN L. CETONE

The universities rely heavily upon the support of classified personnel to help maintain the excellence, efficiency and competitiveness of the institutions. A useful working model is:

Administration + Faculty + Students + Staff =
the Arizona University System
and the realization of mission and goals

As partners in the management of "the company," the staff should expect to share in its profits and risks. During meetings with classified staff at the University of Arizona, Arizona State University and Northern Arizona University, we learned that in the staff's view, only the risks are being shared.

At UA and ASU, we met with the representative staff advisory bodies. At UA, this is a group of 24 persons appointed by the President of the University; at ASU, it is a group of 11, of whom eight are elected by staff to represent geographic areas of the campus and three are appointed by the University President. At UA, the group reports through the Associate Vice President for Administrative Services; at ASU, the liaison is the Vice President for Business Affairs.

At both schools a representative from the Personnel Department sits informally with the group. NAU does not have a representative staff body; we met with staff groups and individuals, totaling approximately 23 persons, arranged through the Personnel Department. Our contacts constitute a small number of total staff, but we met with groups and individuals who are representative, in some more or less official way, of the staff.

Although staff morale is generally low at each school, there are positive aspects to employment at the universities. In each group, the immediate responses to "what are the pluses of working at the University?" were job security and employee benefits. Particularly at ASU where job competition from the community is much greater, the staff recognized that their salaries are lower than those paid off campus, but they felt their positions were less likely to be affected by changing economic conditions. The medical and education benefits were significant to everyone. Many use the education waivers themselves or apply them to spouses and children. Medical benefits were considered very good; at NAU especially, where the benefits package is

---

Esther Sherberg has been a business manager at UA since 1975, serving in the Department of Cellular and Developmental Biology, the Arizona Research Laboratories, the University Instrument Shop, and the Office of Academic Affairs. Previously she held staff positions at Washington University (St. Louis), Stanford University, and the University of Maryland School of Medicine.

Kristin L. Cetone is an Administrative Assistant at The University of Arizona. Her interests have focused on education since completion of her studies at The Ohio State University. Her experiences encompass the instruction of children and adults, to curriculum planning, to involvement in quality of working life of staff. She has significantly contributed to the solution to the formula: Administration + Students + Faculty + Staff = The university system and the realization of its mission and goals.

more comprehensive, this was a major advantage to working at the University.

Other positive attributes are that many of the jobs are perceived as more interesting than those found off-campus, the campuses themselves are dynamic environments, the people are diverse, and, to a degree, there is recognition of the mission of the university and a desire to be a partner in realizing that mission.

The up-sides have down-sides, and there were many problems expressed by the staff. Although job security is important, there is generally great displeasure with the salary levels and the annual uncertainty about salary adjustments and performance awards. Community salaries are generally higher and this is perceived as one of the reasons for high staff turnover and a continuing need to recruit anew and train anew. Staff who want to remain at the universities, for whatever reasons, are faced with accepting lower pay and the probability of not being able to move upward in the classified system. It was a general perception that the classification system is uneven and that inequities exist, both within the institutions and among them, but there was little optimism that the Arthur Young classification study would offer significant improvement. The staff did not believe that the Young study would have any effect on their status, and many participated grudgingly in the data-gathering.

Concern about recognition closely follows concern about salary. The staff feel neither adequately appreciated nor a valued part of the University community. They feel taken for granted. They want to be told more about what is happening at the institution and not to depend on the local newspapers for information. Many of them assume an active role in assisting students and in many cases have more contact with students than some faculty and administrators, but they don't feel this crucial activity is recognized. As far as their input into the administration, the staff feel generally powerless to have any influence.

The staff feel that the available job descriptions are too generic and not specific enough; for many of them this leads to doing tasks that are beyond their job classifications. There are still bosses who expect secretaries to pick up their laundry.

The difficulties in effecting reclassifications and promotions, for themselves and for those they supervise, are a major source of displeasure. Long time lags were cited, also lack of communication about the status of a request, the perceived inability of personnel specialists to adequately review a request because of lack of knowledge of many university jobs and job titles, and the perception of a general lack of interest in the fate of the staff. There are also inequities in reclassifications between state-funded and nonstate-funded positions. Departments who do not want to lose valued employees were reported to have blocked promotional transfers; off-campus applicants were hired to fill positions within a department, that would have been a career advancement for a current employee, because the new person could be paid at entry level. Supervisors who want to promote from within are hindered by lack of appropriate funding. These examples are the kinds of actions that say to staff that they are powerless.

Complaints about working conditions, another reason for staff turnover, ranged from lack of adequate and appropriate space (a major concern) to outdated, inefficient equipment, difficulty in securing supplies on a timely basis, cumbersome personnel systems, and even unsanitary and unsafe conditions.

There was concern about the understaffing of the universities. Work responsibilities continue to grow but the staff are expected somehow to expand to meet new demands without acquiring additional personnel. The staff feel that the efforts they put forth during times of financial cutbacks become the expected standards, with no recognition of the hours of uncompensated time that are being donated. It is this lack of awareness of the extra efforts of the staff that give rise to the perception that only the risks of the partnership are being shared with them.

It was generally agreed that the staff are of high quality. The difficulty in remaining competitive in attracting highly skilled technicians and computer specialists was cited, and the need for such searches to be national in scope. In most cases, this is being done at all three institutions.

The question of the partnership role of the staff in the general organization was of prime importance. The feeling generally at NAU was that the administrators were accessible to staff. They are visible on campus and are well known. However, the staff felt that they were not part of the communication link between administration and faculty. At ASU, the members of the Staff Committee felt quite comfortable with their relationship with the administration, but they felt they had little contact with or awareness of faculty concerns and activities. The members of the UA Staff Council were generally satisfied with their interactions with the administration. None of the staff felt that they held a place in the decision-making chain or that they had any significant influence. Even though there is no formal staff organization at NAU, there is staff representation on several university committees. However, many of the staff were not aware of this and did not know, for example, that they were represented in negotiations regarding benefits. At ASU and UA, when staff are put on university committees, some selections are made from the staff committees.

The education waivers and the developmental training programs are incentives to retention of staff, but these are not available evenly. Some employees are given time off to attend classes, some have to make up the time, others are allowed to take only night classes. Training programs sponsored by the Personnel Department are free to all employees at ASU; at UA and NAU there are charges for some courses and the staff perceive that employees from 'rich' departments have better access to these than those from 'poor' departments. And again, time off and funding are at the discretion of the supervisor and are sometimes perceived to be used punitively.

Reaction to the performance review system was muted because in no one's mind did it have any relevance to merit pay. The perception is that pay adjustment decisions are based, often, on the whim of the supervisor and not on one's record of accomplishment. Implementation of the guidelines linking performance appraisal and merit increases should be carefully monitored. There were no serious problems voiced with the review system itself, except that at ASU it was felt that the system was somewhat confusing because each department uses its own review instrument. Both NAU and UA have standard forms in use throughout the institution. At UA it was felt that the forms are cumbersome and time-consuming and should be completely reviewed. (This review is presently underway, with staff representation on the review committee.)

Salary scales are uniform through the tri-university personnel system. Accelerated hiring rates vary depending on which positions are difficult to fill. All three universities use accelerated rates for secretaries, administrative assistants, computer-related jobs, and police personnel. The accelerated rates are reviewed annually with an eye to difficulty in filling positions and competition from the community.

Many experienced staff have ideas and suggestions about efficiency and productivity that they are eager to share. Thus the formation of Venture Teams[1] would be especially appealing. It is time to experiment with ways in which employees can assist in providing more efficient and effective administrative services. Staff need the opportunity to submit suggestions, such as through a central "suggestion box" or formal work teams, and they must be persuaded that their ideas would be given serious consideration. The contributions made and the implementation of such contributions would need to be well-publicized campus-wide to give credibility to the notion that the staff's experience is valued.

Two other constituencies surveyed by the Task Force on Excellence, Efficiency and Competitiveness--faculty and students--strengthened the position that the staff play a vital role on the campuses.[2] Faculty cited their need for experienced, capable staff assistance and also for the flexibility to be able to award and retain excellent staff. The students indicated a good deal of contact with staff, but there were some negative comments about the courtesy and helpfulness of staff.

CONCLUSIONS

The classified staff feel they are the "silent" partners in the running of the institution. They share in the mission, they perform their roles within the guidelines given them, they suffer the risks involved, and they want to share in the profits. These people should be recognized as full working partners with the faculty and the administration, to the benefit of the entire institution.

There should be no attempt to reduce the benefits available to staff, especially the education waiver.

One of the most effective ways to maximize the use of resources would be to expand programs for training staff. Such programs would provide more productive employees, thus helping to solve some of the problems that accompany limited resources. Increased job satisfaction and morale would result in lower attrition and reduced turnover costs. Enhanced opportunities for employee growth and advancement would result in more proficient employee performance.

RECOMMENDATIONS

- Develop enhanced methods of communication among administration, faculty and staff that will attempt to be responsive to the needs of the staff. A sense of community that acknowledges a shared mission is needed.

- Develop a career path for classified staff that allows them to prepare themselves for advancement and minimizes the problems that arise when an employee reaches the top pay scale in his/her classification. Develop policies regarding career paths that are clearly understood by supervisors and that assure that staff will have first opportunity to move forward when opportunities occur.
- Develop a staff representative body at NAU.
- Alter the format of the Staff Council at UA to include some elected representatives.
- Develop a means through which staff can provide suggestions about the delivery of administrative services, such as Venture Teams, and communicate widely the implementation of such suggestions.
- Develop a university-wide orientation program for staff that stresses their role in the mission of the university and defines the organizational framework as a partnership.
- Develop departmental orientation programs that stress the mission and organization of the department, the pattern of interaction among faculty, staff, students, and any segment of the community the department deals with.
- Include staff representation on more university committees.
- Make participation in education and training benefits more equitable campus-wide.
- Develop networking and communication among staff on all campuses and allow opportunities for collective problem-solving on each campus and between campuses.
- Devise creative ways to shift staff assignments during peak periods, but do not deny new hires when expansion dictates.
- Develop and encourage opportunities for service between staff and the community. Encourage staff always to serve as representatives of the university. For example, allow minority staff to have a role in the recruitment and retention of minority students.
- Provide more recognition activities for staff (e.g., a "Staff Day" at the union facilities with discounts to all staff); encourage departments to recognize staff and publicize the results appropriately.
- Discourage exploitation of staff.

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ENDNOTES

1. See the discussion of the Venture Team in the Task Force Final Report, pages 46 - 47.
2. See Working Papers entitled, "A Survey of Undergraduate Student Opinions," (K. Church), "Survey of Factors of Student Access and Persistence in the Arizona Universities," (A. Cotera), and "Recruitment and Retention of Faculty: An Imperiled National Resource," (G. Davis).

ARIZONA:
THE STATE AND ITS EDUCATIONAL SYSTEM

HAROLD L. HODGKINSON

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ARIZONA:

UTAH
COLORADO
NEVADA
COCONINO
MOHAVE
NAVAJO
APACHE
Flagstaff
YAVAPAI
NEW MEXICO
CALIFORNIA
GILA
Sun City
Glendale
Scottsdale
PHOENIX
Phoenix
Mesa
Tempe
Chandler
YUMA
MARICOPA
GREENLEE
PINAL
GRAHAM
Yuma
TUCSON
Tucson
PIMA
MEXICO
COCHISE
SANTA CRUZ

THE STATE AND ITS EDUCATIONAL SYSTEM

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THE INSTITUTE FOR EDUCATIONAL LEADERSHIP INC

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However, errors of fact and interpretation remain the responsibility of the author.

Harold L. Hodgkinson
Institute for Educational Leadership
Washington, D.C.
April, 1988

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COVER NOTE:

This "people map" of Arizona shows the two major metro areas in which live 75 percent of the state's population. This means that services are delivered to comparatively dense areas or very sparse ones in terms of population density. These two counties (Pima and Maricopa) will tend to dominate the state's political processes because of this rapid and sustained growth. Demographic maps like this one are increasingly used by planners, marketers of goods and services, politicians and even educators!

ARIZONA:
THE STATE AND ITS EDUCATIONAL SYSTEM

HAROLD L. HODGKINSON
Senior Fellow, The Institute for
Educational Leadership

ARIZONA: THE STATE AND ITS EDUCATIONAL SYSTEM

There would *be* no Arizona without water and copper. The state has an abundance of the latter and almost none of the former. Indians discovered in approximately the 1300's that irrigation could allow for meaningful agriculture in what is now Arizona, the Salt River Dam demonstrated this anew for more modern times, and the Central Arizona Project (CAP) has completed the job in the 1980's. (Although most of the water is for agriculture, it is an "insurance policy" for further population growth as well.) The CAP is the last of the great federally financed Western water projects, as Senator Moynihan, who now chairs the Water Resources section under Public Works, has indicated in 1988. One reason: even though the *federal* cost per pint is very high, local water costs are so low that Arizona ranks 8th in per capita water consumption. In addition, heavy pumping of groundwater over many years has caused large fissures to develop in many parts of the state, a situation being dealt with by current policies of recharging a gallon of water back into the ground for every gallon taken out.

Through the years, Arizona has mined more than half of the copper ore dug in the U.S., and this was the mainstay of the economy through the first period of expansion during World War II and on to about 1975, when new forms of high and mid tech manufacturing increased rapidly in the Arizona economy.

A third major prerequisite for growth in the Arizona climate is air-conditioning, which made both Florida and Arizona livable after World War II. Driving through Phoenix on a 120 degree day in an air-conditioned car, looking at the air-conditioned houses with swimming pools in backyards, made possible by investing several billions of federal dollars in CAP, and realizing that a quart of water is *evaporated* for every quart used, one gets a sense of an artificial and vulnerable environment.

In terms of this fragile ecosystem, Arizona has had amazing growth rates since 1970. Most of the growth has occurred in the two counties of Pima and Maricopa, where 75 percent of its citizens live. (There are some long-term limits to growth—83 percent of Arizona land is owned by federal, state and Indian authorities, leaving only 17 percent for private development.)

Phoenix is now listed by most sources as one of the seven best places in the country for job growth, along with Los Angeles, New York, Dallas, San Francisco, Washington and Atlanta. (Scottsdale, a haven for homes for the wealthy and conference centers for major American corporations, is now one of the fastest growing cities.) Phoenix is the prime example in America of a city whose growth has come through annexation. As a result, Phoenix has gone from a city of 17 square miles to over 375 square miles in 1988.

A major problem involves what happens to governments during annexation. During almost *120* separate annexations in Phoenix's history, many school boards have been retained. Thus, Phoenix operates through *28* individual school districts which are partially or totally in Phoenix's 375 square miles, a fairly unmanageable proposition. (An excellent 1983 report, *The Delivery System of Urban Education in Phoenix*, makes the point that if the city had not practiced boundary expansion, it would be a city of 28 mayors and 28 city councils!)

This enormous expansion of the city, by increasing its geography rather than increasing its density, has led to some major problems in the delivery of social services. In South Phoenix, a forty square mile area of poverty, delivery of services to the aged, sick and poor are very expensive on a unit cost basis, as it may be two miles between stops compared to Brooklyn with ten deliveries per block. Given the 375 square miles, and only plans for mass transit, the *car* density increases more than the people density. Ironically, air pollution in Phoenix is now so bad the city ranks tenth from the bottom in air quality, according to the Council on Environmental Quality. The swimming pools, lawn sprinklers and canals have, of course, increased air humidity a considerable amount, which allows pollutants to "hang." One wonders how long doctors will continue to recommend Phoenix as a haven for asthma sufferers! Add to that very high divorce and crime rates, and it is clear that there is much to do in Phoenix. Yet, it is also clear that, given the beautiful mountains, good jobs and lack of crowding, many more people will move to Phoenix in the next decade.

Tucson is smaller, cooler, and has maintained more of a Southwestern flavor than Phoenix. However, the mix of manufacturing and high technology is very parallel to that of Phoenix, and both are growing, Phoenix more rapidly than Tucson. Both cities have attracted a number

ARIZONA PROFILE

1980 Population	29th		2,718,000
1985 Population	27th		3,187,000
1987 Population			3,368,417*
1980 Black Population	29th	74,000	2.8%
1980 Hispanic Population	8th	440,000	16.2%
American Indian Population	3rd	146,461	5.4%
Asian Population		22,888	1.0%
Foreign Born	12th		6.0%
Born in Another State	4th		67%
Population Over 65 Years of Age, 1980	23rd		11.3%
Population Over 65 Years of Age, 1985	20th		12.3%
Under 18	19th		29.1%
Under 18, 1985	18th		27.5%
Median Age, 1980	32nd		29.2 years
Median Age, 1987			34.5 years
Women in the Labor Force	39th		47.8%
College Graduates	19th		17.4%
Birth Rate	9th		17.9 births per 1,000
Voted in 1984 Election	46th		45.5% of eligible voters
Married Couple Households	26th		62.2%
Median Household Income	27th		$16,448
Median Household Income, 1987			$29,473
People per Square Mile			23.9, (U.S. 64.0)
Increase in Personal Income, 1980-85	5th		+ 61% (U.S. + 47%)
Housing Value	13th		$61,900

*Data from C.A.C.I., 1987. All others 1980 unless otherwise noted.

of major high tech corporations, and both have excellent universities within the metro areas. Phoenix has Maricopa Community College, which supplies a vast number of programs and services and has a national reputation for excellence, as does Pima. Tucson has not developed as quickly as Phoenix has, and thus may have an easier time managing future growth, although infrastructure development will be difficult in both cities, especially mass transit. Also, like Santa Fe, Tucson represents "the real Southwest," and may increasingly attract tourists looking for the genuine article.

Although there is Sun City, most in-migrants to Arizona have been young, well-educated, and just moving into their peak earning years. The state is not becoming one vast retirement colony as some have suggested. However, poverty, illness and social pathology are not hard to find in the only state that refused to participate in Medicaid. Even Arizona's conservative politics have changed to a more balanced view of state and local responsibility for its citizens, mainly under the regime of former Governor Bruce Babbitt, a "home-grown" Arizona politician who had taken a swipe at the state's well organized crime syndicates during his days as Attorney General. As this is written, however, the state's gubernatorial function is in great confusion, as Acting Governor Rose Mofford has taken over from Evan Mecham, who now faces a State Senate impeachment trial, a criminal prosecution and a recall election in May, 1988. Seldom is a political outcome so *totally* unpredictable.

One other factor makes Arizona unusual—20 million acres of the state are "owned" by the 13 Indian tribes living there. About 155,000 Indians (5 percent of the state's population) participate in the richly divergent tribal cultures, from Navajo to Hopi. Arizona ranks behind only California and Oklahoma in the numbers of Native Americans. They live mainly on reservations—only about 20,000 live in Phoenix or Tucson, while 70 percent of Mexican Americans live in those two metro areas. Blacks represent about 3 percent of the state's population while Hispanics are about 16 percent. With this as background, let's review the basic numbers seen on page 2.

This is clearly a high growth state, even though the growth is overwhelmingly in only two counties. The state's density of 23 people per square mile suggests infinite possibilities for growth, but this is a very misleading average. The density *range* in Arizona is vast, from *4* people per square mile in Apache, Coconino, Graham and Mohave Counties to *165* per square mile in Maricopa as of 1980. The low density counties are, of course, those in which land is not readily available for private purchase, being owned by state, federal or Indian authorities. Pima County, the other major growth center, has a density of 57 people per square mile and should be better able to handle growth than Maricopa, in this sense. (Before you think Maricopa's the ultimate, remember that New Jersey has an average density of 1,000 people per square mile, the same as Japan.)

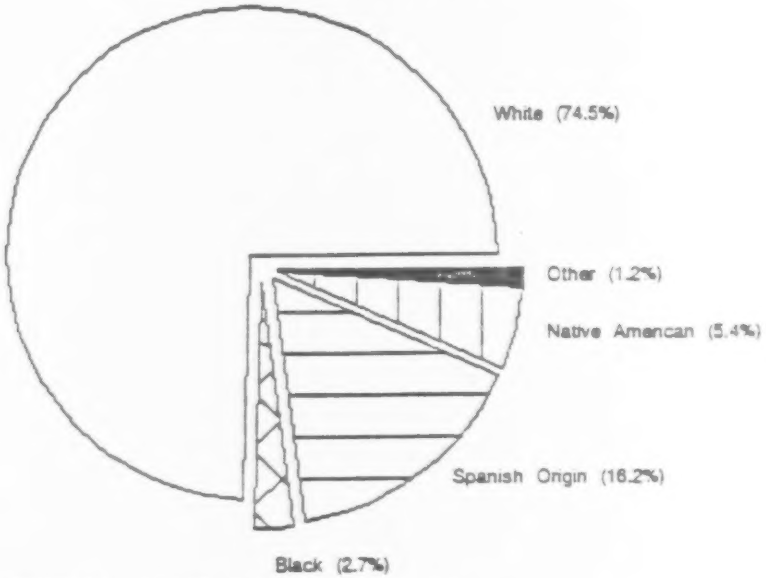
The state's ethnic mix is also unusual, with small Asian and black populations, and large Hispanic and Native American populations, totalling about 25 percent of Arizona's people. However, because whites in Arizona have a lower fertility level than Hispanics or Native Americans, Arizona *children* are about 40 percent non-Anglo, as the Graphs A and B indicate.

One of the central claims of demographics is that the children of today are the adults of tomorrow. That being the case, Arizona needs to consider a future in which 40 percent of the adult population will be non-Anglo. That future arrives (depending on in-migration) in the year 2000. Many Arizonans are from another nation—mostly Mexico—and most are from another state.

By age, the state has a relatively small but increasing population over 65, and a large population under 18, due partially to the higher fertility rates among Hispanics and Native Americans. The population contains a large number of college graduates, and newcomers to the state continue that pattern. (On the other hand, a very high percentage of youth drop out of high school, making Arizona high on well and poorly educated people.) One income problem is the rather small percentage of working women,

GRAPH A

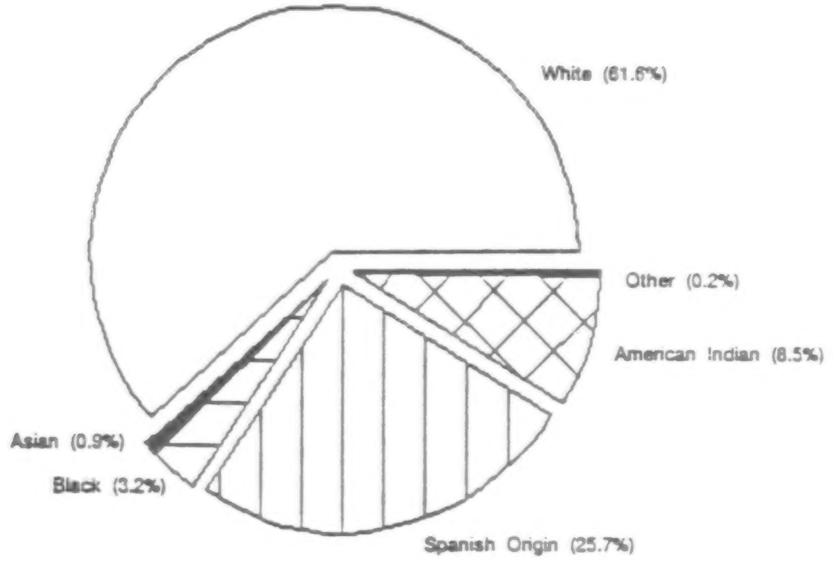
POPULATION DISTRIBUTION BY ETHNICITY
Arizona—1980



From Bartram and Gebel, *Arizona Educational Scan*, Arizona State University.

GRAPH B

ETHNIC COMPOSITION OF THE 0–4 AGE GROUP IN ARIZONA 1980



From Bartram and Gebel, *op. cit.*

it being virtually impossible to live a middle-class life these days on only one salary.

It is also interesting that with all the college graduates in the state, and higher percentages of high school dropouts, a very small number of voters turned out for the last national elections. Are Arizonans focused inward, with more interest in local and state concerns than national issues? It's certainly a possibility. One of the things in Arizona's favor is the relatively low cost of housing, at least compared to other areas which offer good scenery, jobs and climate. That should speak favorably for the state in its effort to win the supercollider project—at this writing, Arizona is one of seven finalists to build the $4.2 billion particle smasher. However, the current gubernatorial confusion will work in the other direction, as will the environmental impact of a project of this magnitude.

Certainly a key element in this state is population movement. Although we normally assume that people only move *to* Arizona, that proves to be incorrect:

ARIZONA POPULATION MOVEMENT 1975-1980

	ALL	WHITE	BLACK	HISPANIC
IN	650,063	595,751	15,560	45,796
OUT	352,680	313,791	11,744	29,440
NET	297,383	281,960	3,816	16,356

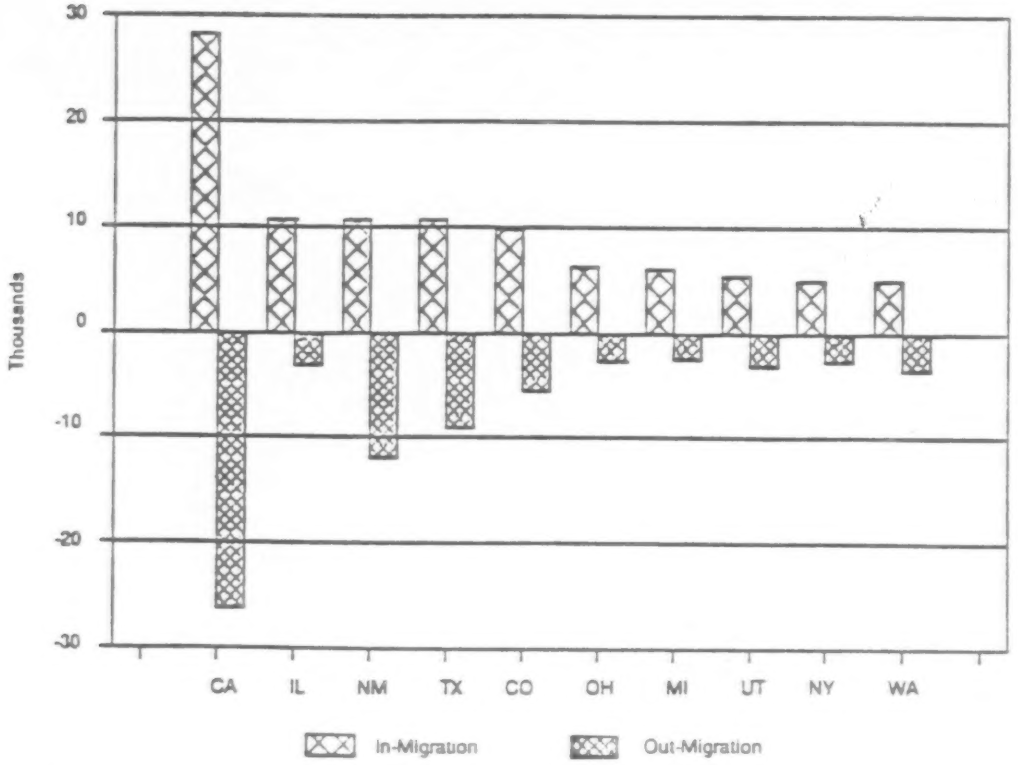
It should be clear that for every two people who move to Arizona, one person moves out. It is also clear that the overwhelming number of in-migrants are Anglo, and that a surprisingly large number of Hispanics move *out* of the state when compared to other states. Data on Phoenix in-migrants in 1983 suggested that they are young (median age 27.9 years), affluent (their houses were $12,000 over the Phoenix average), *32 percent* had attended college, 62 percent were married, 41 percent had children—an ideal profile in terms of family-oriented people just moving into their peak earning years.

We can also tell from which states these in-migrants come (see Graph C, page five). The largest action, both in and out, is (in order) California, Illinois, New Mexico, Texas, Colorado, Ohio, Michigan, Utah, New York and Washington State, at least in 1984–85. Although 28,000 Californians moved to Arizona, 26,000 left Arizona for California, for a rather small "net" of 2,000. The only discrepancy in the "top five" is Illinois—11,000 Illinois citizens moved *to* Arizona, but only 2,000 moved from Arizona to Illinois. But in the "bottom five," Colorado, Ohio, Michigan and Utah all sent more people to Arizona than vice versa. Thus, the "net" represents more people in Arizona from Ohio, Illinois, Michigan, Utah and Colorado than from California, New Mexico and Texas.

One unique thing about Arizona is the degree to which suburbs look like the core city. A slice of Shaker Heights, Ohio will *not* look like a slice of downtown Cleveland,

GRAPH C

ARIZONA MIGRATION FLOWS FOR THE TOP TEN STATES 1984–1985



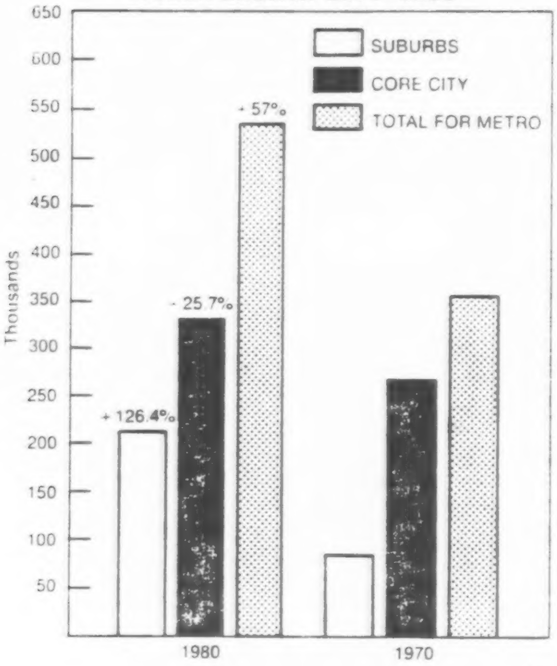
From Bartram and Gebel, *op. cit.*

whereas a slice of the city of Phoenix will look a great deal like a slice of suburban Phoenix. In the rest of the country (minus Florida), increasing suburban populations have meant declining city populations. In addition, *jobs* have moved to the suburbs as well—in Chicago, more than 50 percent of all commuters are going from a suburban home to a suburban job. The core cities of Phoenix and Tucson do not have this worry to the same degree, as the city has grown proportionately with the suburbs. (See chart on next page.)

Phoenix has also expanded suburbia without sucking the life out of the core city. However, in both metro areas, poverty is concentrated within the city limits (but remember, that's 375 square miles for Phoenix!). South Phoenix represents this new kind of low-density poverty area. Among the twenty plus school districts that operate within the City of Phoenix, there are striking differences in the amount spent per child, making consistent improvement throughout Phoenix public schools very difficult to achieve, as we shall see in a minute. Still, compared to other cities, the rebuilding job is easier in Phoenix and Tucson.

Phoenix is now the tenth largest *city*, but only the 22nd largest *metropolitan area*, due largely to the annexation process. In terms of Hispanic populations, however, Phoenix is the tenth largest city (116,000 Hispanic residents) but the thirteenth largest metro area, with about 200,000 Hispanics. This means that about 80,000 Hispanics live in "suburban" Phoenix, a rather large percentage compared to other cities. One of the good things about Florida and Arizona cities is that you can't tell where the city stops and the suburbs begin. Minorities, especially middle-income minorities, have many more housing alternatives in Arizona than in Chicago or Detroit, areas with *very* clearly defined suburbs and low percentages of minority residents. (On the other hand, moving to the suburbs may not increase one's social status if the suburbs are very like the city.) A key question here is the availability of well-paying jobs in various parts of the metro areas of Phoenix and Tucson, for Anglos and minorities as well. In the profile on page six, the first column indicates the percentage of the Arizona workforce employed in that industry, the second indicates the importance of

TUCSON GROWTH 1970–1980



that area to the state's total economy, using 100 as the U.S. average.

This is the healthy profile of a nicely diversified economy. The only vulnerability is in the first category, with the heavy investment in mining which must now be partially converted to other areas. Still, this conversion will be easier for Arizona than the automobile conversion has been for Michigan, Ohio and Indiana. Across the high end of the service economy, the state does very well, as it does with construction, which also pays well. The 1987 data may show an upturn for manufacturing, although Honeywell, Motorola, Sperry-Rand, and Hughes Aircraft have not added many new positions lately—the name of the "high tech" manufacturing game is *jobless growth*. (In addition, the *average* worker in a high tech manufacturing firm is a stock runner, shipper, clerk, secretary, cashier or security guard. In Silicon Valley, only 20 percent of the workforce has any advanced technical or scientific training.) The problem of a "declining middle" in the Arizona workforce is real, if one looks at the jobs people *actually do* at present. (See chart on next page.)

If we look at the future, Arizona will create 12 new jobs for cashiers for every *one* job for computer programmers. The consequences of those numbers for the state's tax base, for the educational system, and quality of life, are vital. Arizona's past has been unplanned worship of the great god, growth. In the future, Arizona will have to *plan*

ARIZONA BUSINESSES AND JOBS

	% OF WORKERS	INDEX
AGRICULTURE, MINING, FORESTRY, FISHING	5.3	133
CONSTRUCTION	8.1	137
MANUFACTURING	14.5	65
TRANSPORTATION, COMMUNICATIONS	6.6	90
RETAIL, WHOLESALE TRADES	22	108
FINANCE, INSURANCE, REAL ESTATE	6.9	115
BUSINESS, REPAIR, PERSONAL SERVICE	9.7	115
PROFESSIONAL SERVICES	20.1	99
PUBLIC ADMINISTRATION	6.6	125

Jobs in Arizona*

Chemists	700
Dentists	1,300
Computer programmers	3,700
Finance managers	4,000
Lawyers	5,000
Doctors	5,400
Janitors	32,000
Secretaries	41,500
Fast food workers	58,900

**Occupational Outlook Quarterly*, Bureau of Labor Statistics, January, 1987

its growth far more carefully to assure equitable access to a high quality of life for all its citizens. We in education love to talk about the best educational program for the future computer programmer—but what is the best education for the future cashier? The question seldom comes up.

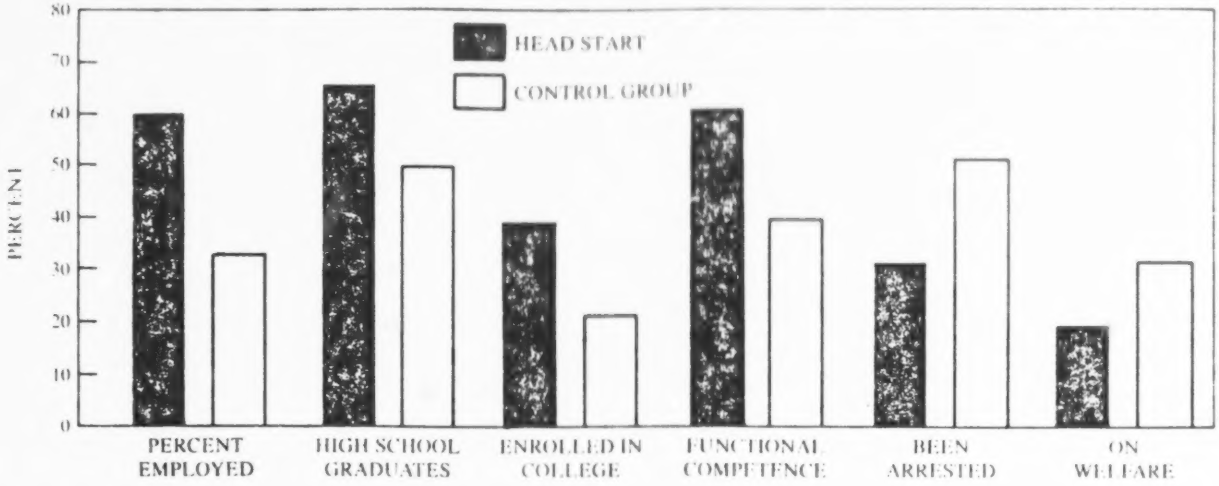
Although no one knows exactly where new jobs come from, the research of David Birch and others supports the importance of new small businesses as *the* single best source of new jobs. (The Fortune 500 do not add jobs to the U.S. economy, they are in the business of *eliminating* jobs.) Each year, about one million new businesses are created in the U.S., to the envy of the rest of the world. Of this pool, about five percent, according to Birch, will suddenly expand and begin to generate large numbers of new jobs. The largest number of these new businesses are in the service sector, broadly defined as non-manufacturing, non-agriculture. Neither Phoenix nor Tucson are leaders in small business starts, particularly *minority-owned* small businesses. Unless some action is taken, Arizona will continue to develop twelve jobs for cashiers for every job for a computer programmer, and will be behind in developing middle-class minorities.

An additional problem concerns the fact that Hispanics in Arizona have usually performed the onerous tasks that had to be done but don't pay well and have few opportunities for advancement (hotel maid, cashiering, retail sales, garbage collection, janitor, waiter/waitress, night watchman). Hispanics' recent rise in political clout in Arizona suggests that the future may be different, and that, via the educational system, more minorities will move into middle income jobs, breaking the stereotype of the "servant class." The development and maintenance of middle-class minority populations would contribute greatly to the social and economic benefit of *all* Arizonans.

A final comment about the state's demographics. Sixty-seven percent of the state's population moved in from another state; 6 percent from another country (mainly Mexico), leaving only 27 percent of the state's residents who were born there. This kind of transiency is exceeded only by Nevada (about 20 percent of residents born in the state), and in both states is responsible for very high crime rates, and perhaps for the low national election turn-outs. (Nevada is now number one in terms of murder per 100,000 people.)

Arizona was *2nd* in overall crime rates per 100,000 in 1985, 16th in murder with 10.3 cases per 100,000 people, 9th in rape with 45 cases per 100,000, and 16th in robbery with 193 per 100,000. The state is now 10th in prisoners (175 per 100,000 in 1980, *267* per 100,000 in 1985), a major financial drain on a state that is strapped for income for social services anyway. A prisoner costs about $22,000 a year to maintain, which taken times 8,500 total prisoners gives the large total of 187 million dollars a year just to maintain the prisoner popu-

HEAD START CHILDREN AT AGE 19



From High Scope Foundation, Ypsilanti, Michigan, 1984 lation. Although Arizona will have to build some new schools in the future, it seems likely that it will build more jails, given the sharp increase in criminality. During the last decade, America increased jail populations more than almost any other human factor.

Certainly education is involved in this trade-off, as 80 percent of prisoners in the country are high school dropouts. This does not mean that if we graduate everyone from high school we could close all the jails, but it *does* mean that if quality of the educational system declines further, prison populations are likely to continue to increase. One prisoner for one year costs as much as eight children in Head Start-type early childhood programs, a program with *demonstrable* ability to deter youngsters from a life of crime, get them through school and into a good job. (See chart on page 8.)

In Arizona, there are about four times as many Head Start eligible kids as there are places in programs. It would seem that the state will have a return on this *lack* of investment, also.

Having now taken a snapshot of this fast-moving state, let's move on to look at the educational system.

ARIZONA'S EDUCATIONAL SYSTEM

The first thing we notice is that Arizona's schools have increased in enrollment, but not in proportion to the state's total growth:

ARIZONA SCHOOL ENROLLMENT, SELECTED YEARS

	1970	1982	1985
ALL	440,000	510,000	596,200
Grades K-8	314,000	359,000	420,600
Grades 9-12	126,000	151,000	175,600

While the state grew about 88 percent from 1970-1985, the schools grew by only 35 percent. While minority students are now about 33 percent of school children, they are *40* percent of children age 0-4 at the present time, due to the higher fertility rate among Native Americans and Hispanics. (On the other hand, Phoenix Union High School District is now over 50% minority enrollment, but that is in contrast to 76% minority enrollment as an average for America's 20 largest cities.) During the 1970-1982 period, American schools were losing 13 percent in enrollment. During this period, Arizona (and Florida) were *adding* students. It was not a particularly good time for passing school bond issues, yet Arizona managed to increase school capacity almost as quickly as it increased *revenue* capacity, allowing for "pay as you go" school increases. In Phoenix, however, the increases in kids brought major increases in complexity.

All indications are for a proportionate increase in school enrollments in Arizona's future, with one exception: the Phoenix Union High School District and "family" of 13 feeder school districts will continue to *lose* students, while the suburban districts around Phoenix will continue to gain, as suburbs show more rapid (and economically wealthy) growth in population. This will mean that schools will increasingly be in one place, children in another. Poverty will increase in Phoenix "city" schools rather than in the suburbs. There will probably be more schools that become segregated due to population movement. This rather gloomy prediction could be upset if the rapidly building coalition of leaders from Phoenix Union High School District, Arizona State University, Phoenix businesses and Mayor Goddard becomes effective in dealing with these issues in a *comprehensive* way. Phoenix need not become what many of our largest cities are today.

Although these issues will also exist in Tucson, the problems will be less, due to smaller enrollments and a slightly more comprehensible system of school districts than is true in Phoenix. (Although they enroll small percentages of students, a word needs to be added about the number of elementary districts in Arizona with very *small* enrollments and low teacher salaries and dollars spent per student. Rural poverty is a problem for some of Arizona's children, on the reservation and off. Within Phoenix schools, assessed valuation per student ranges from $10,031 to $346,125 in two different districts.)

There are some things about the Arizona school profile on page 9 that leap out at one. First, the increase in Arizona students was handled by reducing the amount spent per child. A real danger will be making classes larger. California has worked itself into a terrible hole by increasing class size to 23, the next largest in the nation. Arizona is not in this drastic a fix, but the continuous increase in new students will require new efforts to keep class sizes down and to provide equitable funding levels for *each* child. The next ten years may represent a more formidable challenge in meeting the needs of new students than the last ten.

Second, considering the large number of college graduates and middle-income people in the state, the retention rate to high school graduation is unimpressive, to say the least. (Part of this may be due to an unusual state law

ARIZONA SCHOOL PROFILE

	1973–74	*1985–86*
Per-pupil expenditure	**$ 1,057 (U.S. $ 1,147)**	**$ 2,829 (U.S. $ 3,677)**
Teacher Salaries	**$10,807 (U.S. $11,690)**	**$24,680 (U.S. $25,257)**
Funding: Federal	8.2%	10.0%
State	38.6%	53.3%
Local	53.2%	36.7%

Percent of 1980 ninth graders graduating in 1984:	**69.8% (40th)**
Per capita income, 1984	**$11,841 (U.S. $12,789)**
Student-teacher ratio, 1985	**19.7 to 1 (U.S. 18.3 to 1)**

1980 Private school enrollment	**40,261**
Catholic schools	**18,306**
Other private schools	**21,955**

Children in poverty (age 5–17)	15.8% (U.S. 15.3%)
Pre-school children in poverty	21.2%

Handicapped students, 1984	9.8% (U.S. 11.0%)
Gifted students, 1984	3.9% (U.S. 3.2%)
Bilingual students, 1984	2.3% (U.S. 2.9%)
Minority students, 1984	37.7%
Black	3.8%
Hispanic	21.5%
Asian	1.1%
Native American	11.3%

allowing students to leave school at their 16th birthday or after completing the *10th* grade. It is hard to consider this law to be in the state's long-term best interest, in that it functions to *increase* the high school dropout rate, a situation from which no one benefits.) In addition, the increasing poverty rates among Arizona's very young children suggest a further increase in school dropouts unless specific action is taken.

A third major change is in public school funding, a majority of which now comes from state sources and only a minority from local revenues. In this regard, Arizona is simply mirroring a national trend. However, in a state with great differences among school districts, state policies will have to be mediated through some series of local filters. The Golden Rule is still in operation—he who has the gold makes the rule. It is unrealistic to expect state lawmakers and governors to provide the money for schools but leave the policymaking to local leaders. In a state like Arizona, there may be increasing stress between state and local leaders on education issues in the future, and the current gubernatorial confusion could only make matters worse. In Arizona, the most important question may be—who decides who decides?

The percentage of poverty among children in Arizona seems much too high for such a favored state. In addition, poverty is increasingly concentrated in cities and rural areas, while suburbs are increasing in upper, middle-class income levels. While minorities have moved to the suburbs (Hispanics, at any rate), it is not clear whether the job structure in the state provides for an increasing number of middle-income jobs that are held by minorities, nor does the educational system seem bent on accomplishing this task. Increasing the poverty levels of minority youth will be in no one's self-interest. The creation and support of middle class minority populations will be a major factor in the state's future potential, and the educational system will have to be a key player, both schools and higher education.

While private schools enroll about 13 percent of America's youth nationally, they only enroll 6 percent of Arizona's youth. (This seems to be characteristic of the Southwest as a whole, not just Arizona). Although the data cannot be tracked in Arizona, it is interesting that the schools who are members of the National Association of Independent Schools are now enrolling as many Asian students as they are blacks, leaving Hispanics somewhere in left field. Another interesting factor is the very low number of Arizona students in bilingual classes. One explanation is that most of the bilingual program dollars have come from the federal government, a funding source Arizona has been dedicated to *not* using. Another speculation might involve the attitudes of many Arizonans who may want *all* instruction in English and none in Spanish, Hopi or Navajo.

Given the state's history of total commitment to growth and laissez-faire capitalism, it is understandable that schools were not a primary priority in Arizona's past. However, as one looks at Arizona's *future*, it becomes increasingly clear that an educated citizenry and workforce will make or break the state. If minority populations remain outside of the middle class in large numbers, the state's future will be in major jeopardy, as no state can survive long if 40 percent of a generation (the current minority proportion of young children in Arizona) are unable to fulfill their potential. Equity is not a matter of liberal rhetoric but a *pragmatic necessity*. Investment in jails at $24,000 per prisoner per year is a very major investment, the return on which is very low. The return on the education dollar is incomparably higher. Failing to make the educational investment will mean further increases in the prisoner investment. (Eighty percent of prisoners are high school drop-outs).

Oklahoma currently graduates *80 percent* of its youth to Arizona's 69 percent. Could Arizona move its retention level up to that of Oklahoma? Definitely. It would not take a huge amount of money, but it would require the state to develop a *youth policy*, something it does not currently have, as well as a strategy for implementing that policy. The important thing to remember is that Arizona education is a direct product of the state's economic, social,

ARIZONA HIGHER EDUCATION

Number of institutions (1985-86)	31
Public institutions	19
Private institutions	12
Universities	3
Four year institutions	10
Two year institutions	19

	1970	1985
Total enrollment	109,619	216,854
Public enrollment	107,315	202,036
Private enrollment	2,304	14,818
Full-time enrollment	*	95,642
Part-time enrollment	*	121,212

Minority enrollment, 1984	34,666 (17% of all enrollments)
Black	5,952
Hispanic	18,028
Asian	3,672
Native American	7,014
Foreign	4,957

Average faculty salary, 1985–86	$34,116 (U.S. $32,392)
Bachelor's degrees awarded, 1984	11,370
Arizona students out of state for college, 1984	4,674
Others migrating to Arizona for college, 1984	14,478
Net gain, 1984	9,804
Public higher education appropriations per FTE student, 1986	$ 3,398 (rank 31st)
Appropriations for current operations, 1986	$388,700,000 (public)

political and demographic context. Understanding this context is a necessary prerequisite for understanding how the educational system functions.

ARIZONA HIGHER EDUCATION

It goes without saying that Arizona higher education can be no better than Arizona's schools. Like the schools, higher education is also a creature of the state's economy, politics, social norms and demography. (See chart on p. 10.)

Although Arizona public institutions are dominant in enrollment, it is worth pointing out that independent institutions tripled their enrollments during the period. Public institutions doubled enrollments, a much larger increase than the public schools. Compared with national figures, a far higher percentage of Arizona students are part-time, suggesting that serious attention is being paid to the needs of older students who need additional education for occupational advancement. In addition, the minority percentage is commendable, given that about 20 percent of the high school graduates are minority in Arizona. However, in 1986, 78,594 minorities were enrolled in the state university system, and 124,851 were enrolled in the community college system. The Arizona universities could clearly do better. Just as Arizona attracts tourists, it also attracts students from other states! The combination of scenery, climate and the perceived quality of the three state universities is a compelling one.

Although funding for higher education is not even by enrollment, especially at the three universities, it has avoided the enormous swings up and down that have characterized the California community college system as well as others. Public institution faculty have salaries a little above the national average, just as Arizona public school teachers are a little below the U.S. average. Although it is inferential, it would seem that the awarding of 10,000 bachelor's degrees by the state universities in 1985-86, and 5,000 associate degrees in the same year is to suggest a rather high attrition rate in both sectors. (Nationally, about 46 percent of undergraduates receive a B.A. degree "on time," four years after they begin. There are few indications of what "normal progress toward the degree" means in the community college context of 40 year-old students who are mid-career executives with families, going to college part-time.)

In general, the higher education system seems to be fairly well articulated with the public schools, and to some extent with the state's needs for job training and retraining. The three universities and the community colleges have good reputations, both within and without the state. As the state's population continues to grow, it will bring in many people who already possess a college degree but who will need additional education for new job tasks, as well as many people who need to complete a degree begun elsewhere. Adult education will continue to be a "growth industry" in Arizona, although there may be some tension as to who will offer such instruction. Change in the Arizona higher education system can be evolutionary, as things seem to be functioning well and the state's needs are being met.

ARIZONA—GENERAL CONCLUSIONS

Growth has been *the* name of Arizona's game. Because the people moving in have been young, well-educated and well-paid, the state has been able to increase its economic numbers based on its in-migrants, overlooking the fact that for many minorities and poor born in the state, things were getting worse. Today there seems to be a shift toward a broader set of concerns for the quality of life of all Arizonans, based on pragmatic judgments, not liberal economic or political theory. In addition, Arizona (when it finally gets a new governor) may be ready to do more strategic thinking and planning to *guide* change rather than to sit back and watch. To a large degree, Arizona and Florida are the only growth states in which the *rates* of growth are likely to continue at present levels, as Texas and California decline in growth rates. Although the ecology of Arizona is extremely fragile, there seems to be a new sense of the importance of stabilizing the ecological and human infrastructures.

A number of issues remain before the state:

1. So far, suburban growth has not been purchased by sucking the life out of the core city. However, poverty levels in "downtown" Phoenix are now increasing rapidly, jobs are moving to the suburbs, and the strategy of annexation will soon reach its own limits to growth. One has to begin thinking of the future of the Phoenix *metro area*, and Tucson to a lesser extent. Scottsdale represents a different problem—few lower income people live there, yet there is much work to do—cleaning hotel rooms, cashiering, janitoring, etc. But many of the people who do this work cannot live in the community in which they work. For the state, an increasing problem concerns low-income people travelling long distances to work in high income communities to which they can never belong.
2. The state also needs to stimulate more small business starts on the part of its current citizens, especially minorities. The decline in the middle of the Arizona work force is real, with increasing numbers of jobs on the high and low income sides. Considering the state's rank of *fourth* in the percentage of its citizens who are Hispanic, it needs to do much more in the development of minority middle classes. (Here Florida is far ahead of Arizona, with Miami leading the *nation* in the percentage of blacks and Hispanics who are middle class in income, and large number of minority owned businesses throughout the state).
3. Youth poverty will increase, and the number of young people involved in Head Start-like programs may decline as a percentage of those eligible. More youth entering school will be "at risk," which could result in even further reductions in the numbers of young people who graduate from high school. If this happens, *everyone's interests in Arizona* will be affected negatively. Native Americans and Hispanics, the two groups increasing as a percentage of all youth, have the lowest rates of high school graduation. Unless action is taken, the mathematics will work out inexorably.
4. Higher education needs to be articulated with the public schools. At the moment, some tentative first steps have been made, but mainly through the schools of education at the universities, and through community colleges. It is now time to get the "hard core" liberal arts faculty involved in the process of producing their future students through the public schools. (Higher education in Arizona can be no better than Arizona's schools.) At the moment, Arizona's business leaders seem to have a better understanding of this obvious fact than some of the professoriate.
5. As school populations increase during the next decade, care must be taken that class sizes not increase, and that funding per student does not decline. Also, the schools and the legislature need a *youth policy* that can guide action in this area, particularly in a state with an increasing percentage of youth who come from non-Anglo backgrounds. Minority populations increase less rapidly in Arizona than in California, Texas or Florida, and much can be learned by watching how those states deal with providing an effective education for *all* young people. A particular Arizona issue concerns the great richness of the many Indian cultures in the state, and how (if at all) this diversity can be protected while all students get an education that will help them fulfill their potential.

SOURCES USED IN PREPARING THIS REPORT
Standard set from Connecticut—Florida plus:

1. *Minorities in Higher Education* (Washington, D.C.: The American Council on Education, 1986).
2. *The Education of Hispanics: Selected Statistics* (Washington, D.C.: The National Council of La Raza, 1986).
3. *Education Vital Signs* (Alexandria, VA.: The National School Boards Association, 1986).
4. *The Condition of Education, 1987* (Washington, D.C.: National Center for Educational Statistics, 1987).
5. *All One System*, Harold L. Hodgkinson (Washington, D.C.: The Institute for Educational Leadership, Inc., 1985).
6. *Higher Education: Diversity is Our Middle Name*, Harold L. Hodgkinson (Washington, D.C.: National Institute for Independent Colleges and Universities, 1986).
7. *The Changing Profile of Mexican America* (Los Angeles, CA: The Tomas Rivera Center, 1985).
8. *State Demographics*, by the Editors of *American Demographics* (Homewood, IL: Dow Jones-Irwin, 1983).
9. *Digest of Educational Statistics, 1987* (Washington, D.C.: National Center for Educational Statistics, 1987).
10. *California: The State and Its Educational System*, and *Texas: The State and Its Educational System*, Harold L. Hodgkinson (Washington, D.C.: Institute for Educational Leadership, Inc., 1986). Plus reports on Delaware, Indiana, Kentucky, Michigan, New York, and Ohio.
11. *1986–87 Fact Book on Higher Education* (Washington, D.C.: The American Council on Education, 1987).
12. *Statistical Abstract of the United States, 1987* (Washington, D.C.: U.S. Government Printing Office, 1987).
13. *Occupational Outlook Quarterly* (Washington, D.C.: U.S. Department of Labor, 1986).
14. *Population Profile of the United States* (Washington, D.C.: Bureau of the Census, No. 150, pp. 23, April, 1987).
15. *Book of America*, Neal Peirce and Jerry Hagstrom (New York, NY: Warner Books, 1984).
16. *Phoenix—An Urban City*, Paul W. Briggs, Arizona State University, September, 1987.
17. *School Management Information Data*. Public School Districts, State of Arizona, 1987. Arizona State University, 1987.
18. *School Management Information Data*. Public School Districts, State of Arizona, 1983. Arizona State University, 1983.
19. *The Delivery of Urban Education in Phoenix*. (Briggs, Mangini and Hanauer, Study Team). Arizona State University, Fall, 1983.
20. *Arizona Environmental Scan*. Bartram, J. and Gebel, M. (February, 1988). Tempe: Arizona State University, Office of Institutional Analysis

ARIZONA: SUMMARY OF MAJOR POINTS

1. Growth has been the name of the Arizona game, and every indication is that it will continue for at least a decade longer. Like Florida, growth in Arizona has increased the fragility of human and natural systems. Most of the Arizona growth has been concentrated in Pima and Maricopa Counties, where about three-quarters of the population reside.
2. Growth, especially in Phoenix, has been dealt with simply by expanding the city limits from 17 to 375 square miles through a process known as annexation. Thus the city grew, but densities of people per square mile stayed about the same. Today, Phoenix has some areas of great poverty and very low density, which means that services are expensive to provide when it's two miles between stops.
3. Suburban growth in both Phoenix and Tucson has been achieved without destroying the core city, which has grown along with the suburbs. That process is now slowing down, and poverty is increasing in the city limits of both Phoenix and Tucson but not in the suburbs. There are limits to growth, in that over seventy percent of Arizona's land is owned by governments—U.S., state and Indian.
4. Contrary to expectations, the Arizona population is not very old, and birth rates in the state are high, particularly for Hispanic and Indian residents who form the largest minority groups in the state, with smaller black and Asian populations. The people are either very well-educated (high percentage of college graduates) or poorly educated (high percentage of high school kids who drop out). The majority of Arizonans were born in another state, contributing to a sense of transiency. Crime rates are also very high in Arizona, and the budget for prisoners is likely to expand faster than the budget for new schools.
5. Minorities in Arizona have not developed substantial middle classes, as they have in Florida and California, as measured by small business starts, suburban housing or middle-income jobs. The public schools, the higher education system and Arizona business leadership can make a good start on this crucial task.
6. The Arizona economy is nicely diversified (the major key to a state's ability to ride out a recession), and the conversion from a dependency on copper mining has shifted to increases in mid and "high tech" manufacturing and high end services—financial, legal, business and technical, to name but four. However, there are still too many jobs that pay very little. For every job the state generates for a computer programmer, it generates about *12* jobs for cashiers. Increasingly, these poorly paid service workers—hotel and personal maids, janitors, security guards and clerks—will not be able to live in the communities where they work, which can create major social tensions.
7. Arizona's minority populations are now forty percent of the small children in Arizona. The state must make sure that *every* child gets a good education and a chance at a good job. If forty percent of Arizona's youth get a bad start and cannot contribute their best to the state's economy, the lives of every state resident will be diminished. This is not liberalism but pragmatism—both liberals and conservatives can agree on the necessity of maximizing educational benefits in order to increase the state's economic potential.